



Installation and Configuration Guide for SAP RDP Integration Accelerator

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PURPOSE OF THIS DOCUMENT

This document provides details of the installation and configuration steps for the Integration accelerator consulting package for RDP integration into ECC EHP7 or S/4 HANA 1909/2021. This document is not a replacement for standard RDP product scope. For detailed product information, please refer to the standard help documentation of [SAP Responsible Design and Production](#).

If you are interested in the details of scope of the Integration Accelerator package, please refer to the Detailed Scope Document which comes with this package.

HIGH LEVEL SCOPE AND APPROACH

The SAP Responsible Design and Production Integration Accelerator aims to speed-up the implementation of SAP RDP with ECC 6.0 EhP7 or with S/4 HANA 1909/2021.

The offering provides an ABAP based integration package, which comes with prebuilt integration content, which can be deployed to act as a fast-starting point for customers to integrate their RDP solution to their backend SAP system. The integration content helps in selecting, extracting and pushing the relevant data from the backend tables into the cloud based RDP solution via the [RDP push API interfaces](#).

This document describes the steps for installing and configuring the RDP Integration Accelerator Package.

TECHNICAL PREREQUISITE FOR INSTALLING THE PACKAGE

The below technical software component is the minimum version prerequisite for successfully installing and using the accelerator package:

SAP ERP	ECC 6.0 EHP 7
SAP_BASIS	740 Package Level 0019

Below is the minimum version for PLM software component required for using the PLM package:

SPLMWUI	747 SP Level 0016 Support Package: SAPK-74716INPLMWUI
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In case [Packaging Composition from HU report](#) is used from a logistics system, please consider that RDP Integration Accelerator can be deployed on customer logistics system if it is a NetWeaver systems with ABAP application server.

SECURITY

All replication endpoints are secured with TLS (https) to ensure encryption of the customer data being sent.

Authorization is using XSUAA and the OAuth 2.0 client credentials grant.

Using the RDP service broker on BTP, customers can create a service instance that allows to get an access token for replication.

SSL certificates/handshake to build the trust between the systems is a prerequisite for data replication.

COMPONENT FOR CUSTOMER INCIDENTS

For any technical assistance for RDP Integration Package, you can create support tickets accessing [SAP ONE Support Launchpad](#) using Ticket Component: SV-COE-VPT-RDP.

USER ASSISTANCE - SAP RESPONSIBLE DESIGN AND PRODUCTION

For the user assistance for SAP Responsible Design and Production, see [SAP Responsible Design and Production - SAP Help Portal](#).

SAP Responsible Design and Production provides public API for data replication. To be able to push data from your system you need to configure the replication in SAP Responsible Design and Production. Please refer to this [link](#) to get more information on the steps to be performed.

To access the RDP API documentation, go to [API Reference | Replication | SAP API Business Hub \(ondemand.com\)](#) .

For more information on the API elements, see [API for data Replication](#) and [API References](#)

SAP API Business HUB RDP Overview page: [Overview | Replication | SAP API Business Hub](#)

Note:

To get started with SAP Responsible Design and Production use the standard procedures for the SAP BTP, Cloud Foundry environment. For an overview of the required steps, see [Getting Started in the Cloud Foundry Environment](#).

The following prerequisites must be fulfilled

- An SAP BTP global account
- Members are added to the SAP BTP account
- An SAP BTP Cloud Foundry subaccount is created and enabled

Subscribing to Services

Subscribe to the following services in the SAP BTP cockpit.

- SAP Responsible Design and Production

For instruction, see [Subscribe to Multitenant Applications Using the Cockpit](#).

For more information on the steps to be performed on BTP global account for setting up the SAP

What's New in RDP Integration Accelerator V6

The **V6 release** of the SAP RDP Integration Accelerator introduces enhancements to improve data replication, performance, and additional attributes added or removed. This version includes new features and refinements across multiple integration areas:

1. Customer Data Enhancements

- Updated sample **BAdI implementation** and **Excel upload functionality** to filter tax numbers based on SAP-defined tax categories, eliminating unsupported entries.
- **New selection filter:** Added **Company Code** as a filtering criteria.

2. Supplier Data Enhancements

- **New selection filter:** Added **Company Code** as a filtering criteria.

3. Product Data Replication Enhancements

- Introduced additional attributes for **Quantity Dimensions**, including:
 - **Net Weight**
 - **Gross Weight**
 - **Weight Unit of Measure**

4. Batch Replication Enhancements

- Implemented additional logic to determine **packaging composition** in batch replication.

5. Delivery Data replication Enhancements

- Performance optimizations for faster and more efficient data replication.
- Support for **Delivery Batch Split** scenarios.
- Handling of **Catch Weight Material** scenarios.

7. Packaging Composition Enhancements

- Added support for ending validity of a product in a packaging composition - **Valid To Date assignments**. Sample implementation is offered in the sample BAdl implementation.
- Improved handling of material number **selection criteria restrictions** to enhance flexibility.
- **New exclusion rule:** Data with a **deletion flag** will now be excluded from replication.

8. Packaging Elements Enhancements

- **New exclusion rule:** Data with a **deletion flag** will now be excluded from replication.
- Introduction of **Reusability** functionality (isReusable API attribute)

9. Packaging Data V2 APIs

- Enhanced support for **Version 2 RDP APIs** for both Packaging elements and Packaging compositions.
- Customers can choose if they want to use V2 or V1 of APIs, by adjusting the services paths
- Sample BAdl implementations are available for both V1 and V2 of the APIs

10. Packaging Fee Replication Enhancements

- **New Sample BAdI Implementation for Packaging Fee Replication for CONAI.**

- Support for retrieving **Customer Exemptions** and **Company Code Exemptions**.
- **Customer-Dependent Pricing Condition Replication:**
 - **New parameter: Customer Role Dependent Fees** included in the packaging fee retrieval report.
 - Retrieval of **Customer Role Replication**.

11. New functionality: RDP Classes & Characteristic Generation

- A new report to create recommended **RDP classes and characteristics**, supporting:
 - Packaging Elements in Material Classification
 - Packaging Compositions in BOM, classifying Pckg. Elmnts. into Main/Subordinate
 - Packaging Compositions and Main/Subordinate Packaging Elements in PLM SpecDB
 - Packaging Fee Data Classification
 - Customer Extension Data Classification

INSTALLATION OF TRANSPORT REQUESTS ON SYSTEM

Prerequisites:

Authorizations for the following transaction codes:

- CG3Z in client 000 or any other needed client to upload transport files (or authorization to execute Function Module ARCHIVFILE_CLIENT_TO_SERVER)
- STMS

STMS to import transport files

As a first step, the provided packages must be imported into your ECC or S/4 HANA system. Follow the below steps to import the necessary RDP Integration Accelerator packages.

Copy provided files

For installing RDP development package on the backend ECC or S/4 HANA system it is necessary to copy the provided files on the system on which SAP is installed. (Ex. **K900446.BP7** & **R900446.BP7**). Copy all the files we have provided to you, for General objects, RDP and/or PLM objects.

Please note the following sequence to install the transport requests (if otherwise stated in ReadMe.txt file when provided):

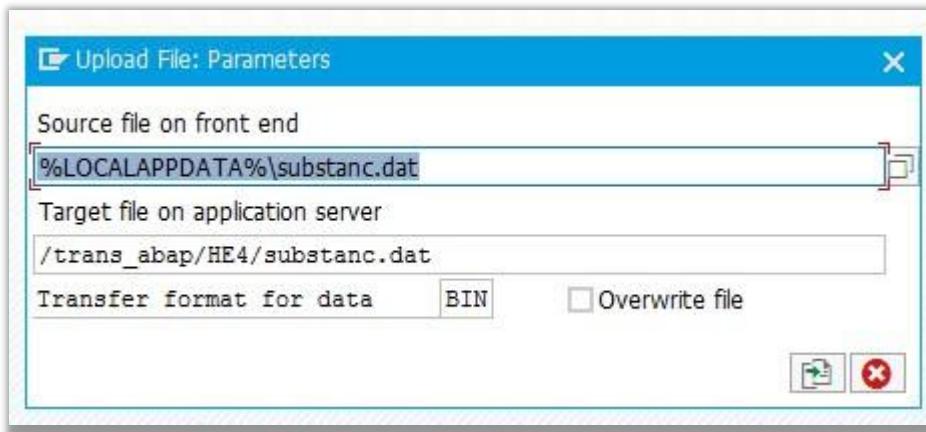
1. TR for General Objects
2. TR for RDP Objects
3. TR for PLM Objects

Please read the file ReadMe.txt shared together with the TRs files, explaining the TRs shared and sequence to be installed in more particular way.

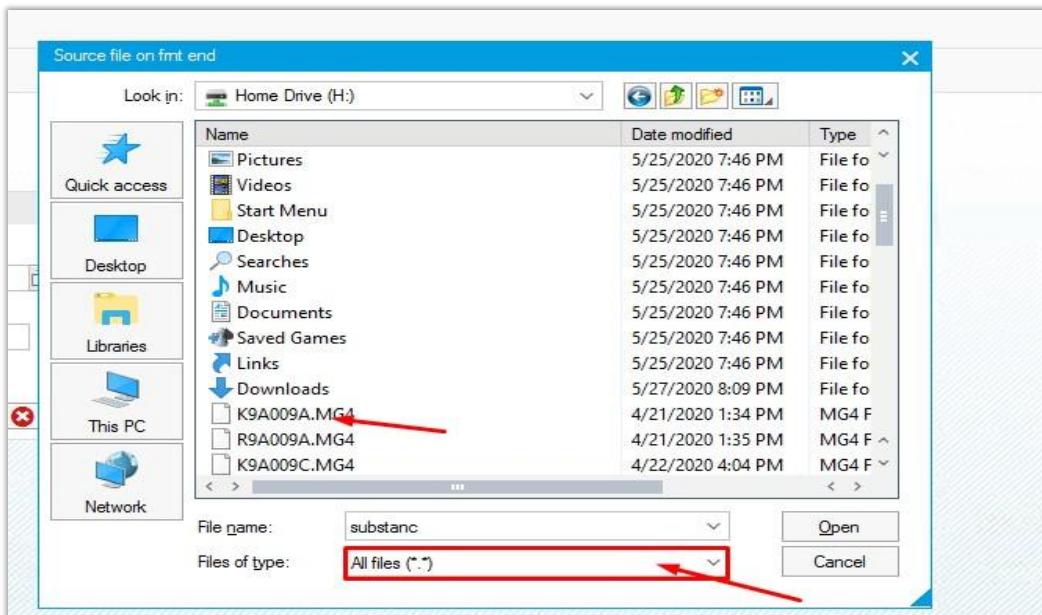
Note: the screenshots for uploading and installing the TRs are using sample TRs and are for your reference only.

Upload Transport Files

In your system, open necessary client and upload transport files on your system server. Open transaction 'CG3Z' (If transaction doesn't exist on the system see next step).



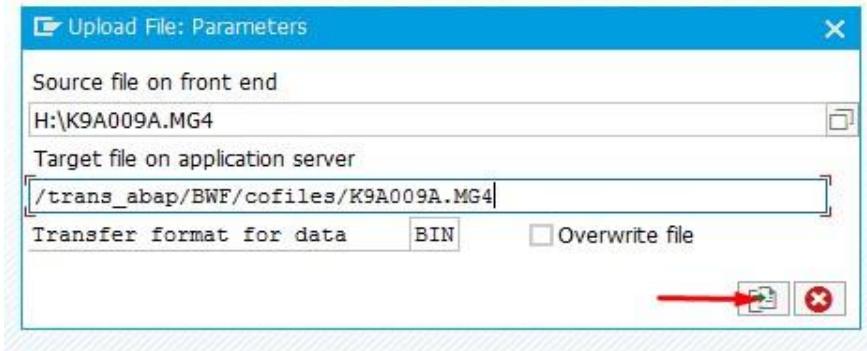
Choose transport files provided to you:



Enter details on source file and target file on your application server:

1. ./trans_abap/{system}/cofiles/{name transport file} (for file having first later 'K')
2. ./trans_abap/{system}/data/{name transport file} (for file having first later 'R')

Note: For details on path configured on your application server, use transaction 'AL11'.



Press upload. (Ex. upload cofiles on BWF system).

Test Function Module: Initial Screen

Debugging Test data directory

Test for function group OPTA
Function module ARCHIVFILE_CLIENT_TO_SERVER
Uppercase/Lowercase

Import parameters	Value
PATH	H:\K9A00AC.MG4
TARGETPATH	/trans_abap/MG4/cofiles/K9A00AC.MG4

If 'cg3z' transaction doesn't exist on your system, please follow below step:

- Use Function Group: **OPTA**, function module: **ARCHIVFILE_CLIENT_TO_SERVER (execute FM using transaction code SE37)**
Add the path where source files will be saved, and also the server path (target file on application server). Use Uppercase/Lowercase flag.
- Enter details on source file and target file on application server:
 1. /trans_abap/{system}/cofiles/{name transport file} (for the file having first later 'K')
 2. /trans_abap/{system}/data/{name transport file} (for the file having first later 'R')
- Execute above steps for all provided files, for general objects and for RDP and PLM objects.

Note: For details on path configured on your application server, use transaction 'AL11'.

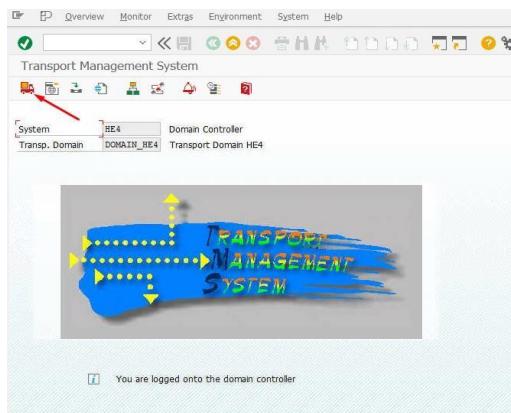
Install Transport Requests

Please follow below steps to install all transport requests provided.

Note: Please note the order to install the transport request (check also the ReadMe.txt file shared to you together with TRs, for any particular cases):

1. TR for General Objects (mandatory pre-requisite for all other packages)
2. TR for RDP Objects
3. TR for PLM Objects (only needed if you are integrating SAP PLM to RDP)

1. Open transaction 'STMS'. Click 'Import Overview (F5)'



- Double-click on the entry with the name of the system.

This screenshot shows the "Import Overview" screen for the domain "DOMAIN_HE4". The title bar says "Import Overview: Domain DOMAIN_HE4". Below it, there's a toolbar with icons for file operations. A message indicates "Number of import queues: 2". A table lists the import queues:

Queue	Description
CL5	Dummy System
HE4	Domain Controller
Σ	

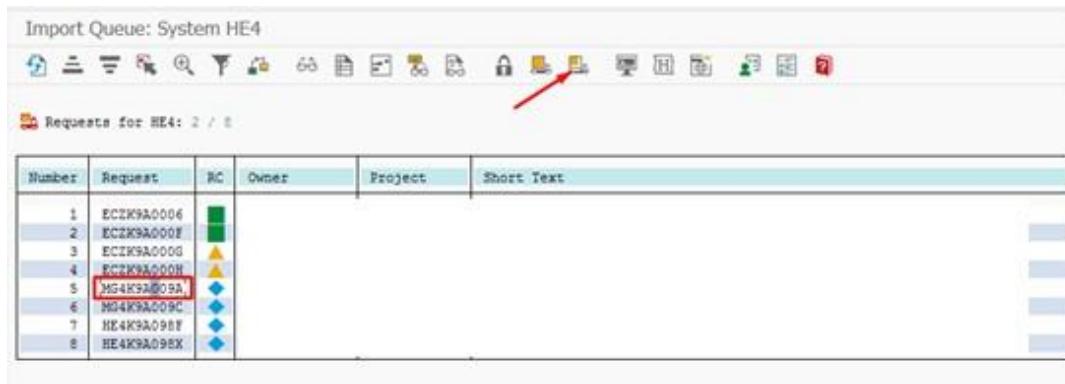
- Add new transport request on the queue.

This screenshot shows the "Queue" menu open. The "Extras" tab is selected. The "Other Requests" submenu is open, showing options like "Activate Inactive Requests" and "Delete Imported Requests". A red arrow points to the "Add" button in this submenu.

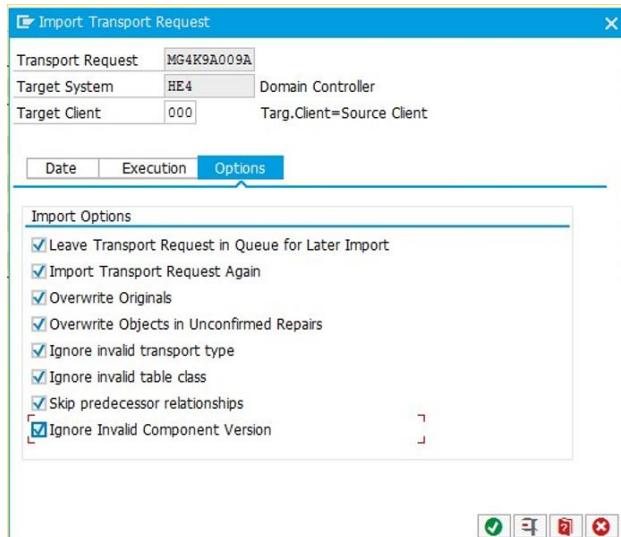
- Choose necessary transport request (since 'K9A009A.MG4' file has been uploaded, 'MG4K9A009A' entry should be selected).

This screenshot shows two windows. The top window is titled "Transport requests (1) 31 Entries found" and lists entries: ECZK9A0006, ECZK9A000F, ECZK9A000G, ECZK9A000H, MG4K9A009A (selected), MG4K9A009C, and HF4K9A007P. The bottom window is titled "Add Transport Request to Import Queue" and has fields for "Transp. Request" (set to MG4K9A009A), "Import Queue" (set to HE4), and "Import Again" (unchecked). A red arrow points to the "Add" button in the bottom dialog.

5. Choose the entry with the name of the transport request and click 'Import request':



6. Enter target client and select all check boxes and press Continue. On the next screen click 'Yes':



CONTENT AND PACKAGE HIERARCHY

The package provides the relevant code to select the required data from SAP backend system and replicating it to the RDP tenant, using standard HTTP endpoints.

The package includes the following integration components:

ERP Integration Reports

- **Organizational Data** – Replication of company structures, plants, sales organizations, distribution channels, and divisions.
- **Configuration Data** – Replication of unit of measure definitions, currency details, product hierarchies and other configuration elements.
- **Master Data Replication**
 - Supplier
 - Customer
 - Product
 - Batches

Transactional Data Replication

- **Delivery Documents** including the **Billing Document Items**
- **Material Movements** including the **Billing Document Items & Supplier Invoice Items**
- **Inventory**
- **Incoterms**

Packaging Data Integration

- **Packaging Composition Replication**
 - Extracted from PLM, Recipe Development, and Bill of Materials (BOM).
- **Packaging Elements Replication**
 - Retrieved from PLM and Material Classification.
- **Partial Packaging Composition Item Replication**
 - Handling Units replication.
- **Creation of RDP recommended classes and characteristics**
 - create example classes and characteristics for storing packaging data in your SAP ECC / S/4HANA system based on Material Classification or Specification Database.

Packaging Fee Replication

- **Synchronization of Packaging Fees** – Replication from RDP back to ECC/S4H for creating pricing conditions and compliance reporting.
- **Customer Role Replication** – Replication of customer-specific role attributes from RDP to ECC/S4H for creating customer dependent/independent pricing conditions and material classifications
- **Customer Exemptions and Company Code Exemptions** – Replication of customer-specific and company code-specific exemptions from RDP to ECC/S4H for creating customer dependent/independent pricing conditions and material classifications.

Analytical and Configuration Reports

- **Report for Generating Recommended RDP Classes and Characteristics**
 - Packaging Elements in Material Classification
 - Packaging Compositions in BOM, classifying Pckg. Elmnts. into Main/Subordinate
 - Packaging Compositions and Main/Subordinate Packaging Elements in PLM SpecDB
 - Packaging fee data classification
 - Customer extension data classification

Error Handling and Logging

- **Error Monitoring and Troubleshooting Reports** – Comprehensive logging and troubleshooting capabilities for monitoring replication status and resolving data inconsistencies.

Package hierarchy and structures:

/VPCOE/CLOUD_INTEGRATION is the base package containing following sub-packages:

/VPCOE/COMMON_INTEGRATION containing common Integration objects

/VPCOE/RDP_INTEGRATION containing *RDP ERP* Integration objects/reports

/VPCOE/PLM_INTEGRATION containing RDP Packaging Data Integration objects/reports
(only for PLM component)

/VPCOE/OBJ_INTEGRATION containing RDP Packaging Data Integration objects/reports from BOM and Material classification. It also includes the Handling Units replication report.

/VPCOE/RDP_PCKGFEE_INTEGRATION containing packaging fee Integration objects/reports and also customer role/ customer exemptions and company code exemptions replications from RDP back to ECC/S4H

STEPS AND PREREQUISITES FOR CONFIGURATIONS OF INTEGRATION ACCELERATOR

Once you have followed the above steps to import the transport packages, the next step is to configure the technical connectivity between the backend system and RDP tenant.

Prerequisites

- Setting up the replication services in SAP BTP Cloud Cockpit
Please follow [these steps](#) to set up the replication services and subscribe to RDP service
- Getting credentials of the SAP RDP service from your tenant:
 - Client Id
 - Client Secret
 - token endpoint URL
- Establish the SSL connection to SAP BTP
 - follow this link to establish connection: [Establish the SSL Connection to SAP BTP - SAP Help Portal](#)
 - Follow the instruction in note for downloading and importing BTP certificates: [2853519 - How to download the SSL certificate of SAP BTP - SAP for Me](#)

Overview steps:

1. Open the RDP API gateway (the endpoint for RFC destination VPCOE_RDP_OAUTH)
2. Choose the lock icon before the URL in the address bar.
3. Select Connection is secure from the context menu and then Certificate is valid.
4. Switch to the Details tab of the Certificate dialog box.
5. Choose Export selected certificate.
Specify pem as the certificate type and then save the certificate

The required certificates to be imported in ERP:

DigiCert Global Root G2

DigiCert Global G2 TLS RSA SHA256 2020 CA1

- Authorizations for the following transactions:
 - SM59 to create an RFC destination

For more information on all the steps required to be performed on BTP Cockpit and on token endpoint URL and client credentials, see [Push Data Replication](#).

The integration package invokes the RDP APIs via HTTPS connection from the backend system. To support this, several RFC connections have to be created on the backend system for RDP reports. The below steps have to be done to create and configure the RFC connections.

Note: For RDP Integration package there is no need to configure OAuth Client 2.0

RFC Connections for RDP replication reports

The following RFC destinations of type 3 – ABAP Connection must be created in the backend system. (Transaction code ‘SM59’)

- VPCOE_RDP_GENERIC
- VPCOE_RDP_OAUTH
- VPCOE_RDP_PLM
- VPCOE_RDP_PLM_PKG_ELMNT
- VPCOE_RDP_PCKF

To create a new RFC destination, carry out the following steps:

1. Open transaction SM59
2. Choose *Create*.
3. Enter name `VPCOE_RDP_GENERIC` for the RFC destination.
4. Select connection type G (HTTP Connection to External Server).
5. On the **Technical Settings** tab, enter the following data:
 1. **Target Host:** server endpoint URL (ex. {tenant-subdomain}.eu20.ce.sustainability.cloud.sap)
 2. **Port:** 443

RFC Destination VPCOE_RDP_GENERIC

Connection Test

RFC Destination	VPCOE_RDP_GENERIC	Description
Connection Type	G	HTTP Connection to External Serv
Description		
Description 1	RDP Integration: Generic Destination	
Description 2	Path Prefix changes from VPCOE Report	
Description 3		

Administration Technical Settings Logon & Security Special Options

Target System Settings

Target Host	0-integ-ecc.dev-eu20.ce.sustainability.cloud.sap	Service No.	443
Path Prefix	/api/replication/v1/Deliveries		

HTTP Proxy Options

Global Configuration	
Proxy Host	
Proxy Service	
Proxy User	
Proxy PW Status	is initial

6. On the Logon & Security tab

1. Set Do not use a user.

Set SSL to Active.

RFC Destination VPCOE_RDP_GENERIC

Connection Test

RFC Destination	VPCOE_RDP_GENERIC	Remove
Connection Type	G	HTTP Connection to External Serv
Description		
Description 1	RDP Integration: Generic Destination	
Description 2	Path Prefix changes from VPCOE Report	
Description 3		

Administration Technical Settings **Logon & Security** Special Options

Logon Procedure

Logon with User

- Do Not Use a User
- Basic Authentication

User	
PW Status	is initial

Logon with Ticket

- Do Not Send Logon Ticket
- Send Logon Ticket Without Ref. to a Target System
- Send Assertion Ticket for Dedicated Target System

System ID	Client
-----------	--------

Security Options

Status of Secure Protocol

SSL	<input type="radio"/> Inactive	<input checked="" type="radio"/> Active
SSL Certificate	DFAULT SSL Client (Standard)	Cert. List

Authorization for Destination

Create another RFC destination for OAuth token following below steps:

1. Open transaction SM59
2. Choose *Create*.

3. Enter name VPCOE_RDP_OAUTH for the RFC destination.
4. Select connection type G (HTTP Connection to External Server).
5. On the **Technical Settings** tab, enter the following data:
 1. **Target Host:** authentication endpoint URL (ex: {tenant-subdomain}.authentication.eu20.hana.ondemand.com)
 2. **Path prefix:** /oauth/token
 3. **Port:** 443

RFC Destination VPCOE_RDP_OAUTH

Connection Test	63
RFC Destination	VPCOE_RDP_OAUTH
Connection Type	G HTTP Connection to External Serv
Description	
Description 1	RDP Integration: oAuth 2.0 destination
Description 2	
Description 3	

Administration **Technical Settings** Logon & Security Special Options

Target System Settings

Target Host	[REDACTED] authentication.eu20.hana.ondemand.com	Service No.	443
Path Prefix	/oauth/token		

HTTP Proxy Options

Global Configuration	
Proxy Host	
Proxy Service	
Proxy User	
Proxy PW Status	is initial

6. On the **Logon & Security** tab
 1. Set **Basic Authentication**
 2. Enter **username** and **password**
 3. Set **SSL to Active** and choose SSL certificate to be used.

7. Save

Note: The token URL, username, and password required for authentication can be retrieved from the SAP Business Transformation Platform (BTP) Cockpit, as detailed in [the official documentation](#).

When testing the RFC connection **VPCOE_RDP_OAUTH**, you may encounter the error message:
`{"error": "invalid_request", "error_description": "Missing grant type"}`
 This message can be disregarded, as the RDP Integration package handles the grant type

RFC Connections for RDP Packaging Data reports

Create a new RFC destination, carry out the following steps:

1. Open transaction SM59
2. Choose **Create**.
3. Enter name **VPCOE_RDP_PLM** for the RFC destination.
4. Select connection type G (HTTP Connection to External Server).
5. On the **Technical Settings** tab, enter the following data:

1. **Target Host:** token endpoint URL (e.g. {tenant-subdomain}.eu20.ce.sustainability.cloud.sap)
2. **Path Prefix:** /api/replication/v1/PackagingCompositions
3. **Port:** 443

6. On the **Logon & Security** tab
 1. Set **Do not use a user**.
 2. Set **SSL to Active** and choose SSL certificate to be used.
7. Save

Create another RFC destination following the same steps above:

1. Enter name `VPCOE_RDP_PLM_PKG_ELMNT` for the RFC destination
2. On the **Technical Settings** tab, enter the following data:
 1. **Target Host:** token endpoint URL (e.g. {tenant-subdomain}.eu20.ce.sustainability.cloud.sap)
 2. **Path Prefix:** /api/replication/v1/PackagingElements
 3. **Port:** 443
3. Save

Note: the name of RFC destinations created for Packaging Data reports can differ, as the RFC destination is a selection parameter that has to be specified when executing the reports.

For more information on creating the RFC connections for Packaging Data Integration, please refer to this [link](#).

RFC Connections for RDP Packaging fee reports

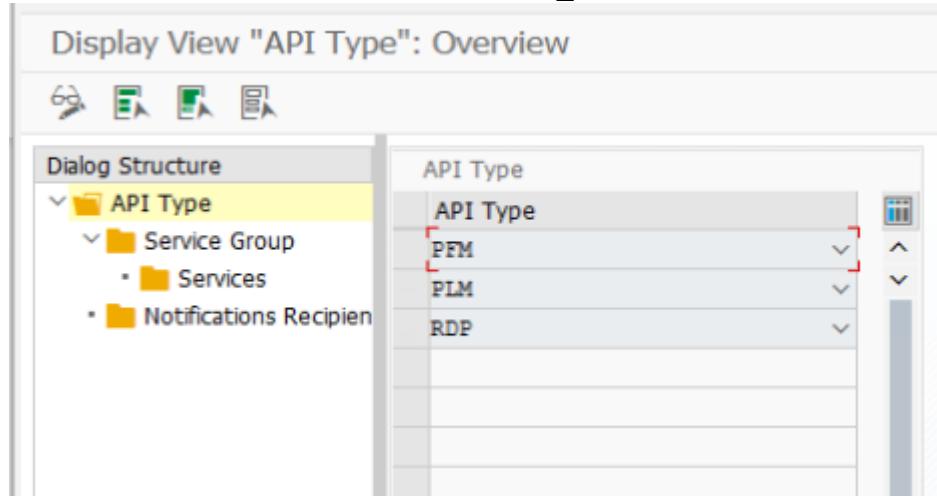
Create a new RFC destination, carry out the following steps:

8. Open transaction SM59
9. Choose *Create*.
10. Enter the name `VPCOE_RDP_PCKF` for the RFC destination.
11. Select connection type G (HTTP Connection to External Server).
12. On the **Technical Settings** tab, enter the following data:
 1. **Target Host:** token endpoint URL (e.g. {tenant-subdomain}.eu20.ce.sustainability.cloud.sap)
 2. **Path Prefix:** /api/packaging-report/v1/
13. On the **Logon & Security** tab
 1. Set **Do not use a user**.
 2. Set **SSL to Active** and choose SSL certificate to be used.
14. Save

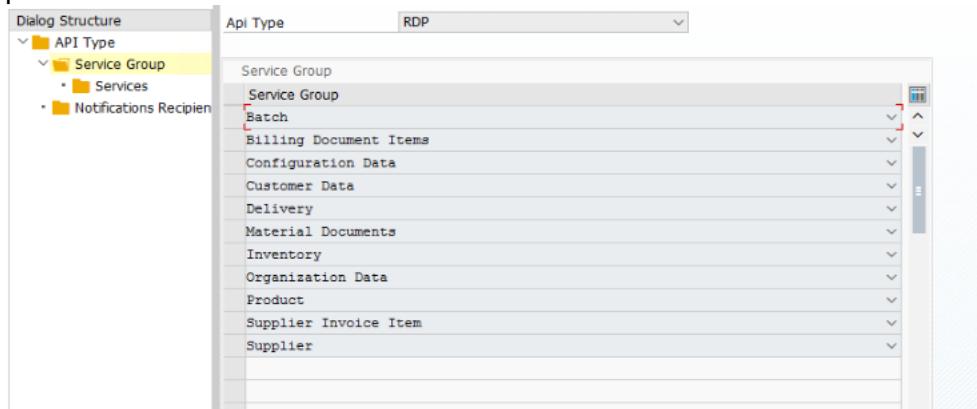
Configuration settings for services

In the following steps you will add the required configuration settings to the service groups/ service IDs .

Open transaction 'SM34'. Enter /VPCOE/RDP_SRV view cluster and click on 'Maintain' button.



Select API type 'RDP' and double-click on 'Service Group'. You will get a list with all RDP service groups:



Maintain the path prefix and package size

Click on necessary Service Group and choose Services to maintain the path prefix or package size for it.

The maximum recommended package size to be used for all services is 1000 (except Material Documents where maximum recommended package size is 2000). Click on Save button to save all configurations.

Display View "Services": Overview					
Dialog Structure		Service Group	CONF	Path Prefix	PckgSize WPCount
API Type		Service Group	RDP		
		Services			
Service Id				/api/replication/v1/Countries	500 0
Country				/api/replication/v1/Currencies	500 0
Currency					500 0
Delivery Document Item Category				/api/replication/v1/DeliveryDocumentItemCategories	1.000 0
Delivery Document Type				/api/replication/v1/DeliveryDocumentTypes	1.000 0
Incoterms				/api/replication/v1/Incoterms	1.000 0
Movement Type				/api/replication/v1/MovementTypes	1.000 0
Product Group				/api/replication/v1/ProductGroups	1.000 0
Product Hierarchy				/api/replication/v1/ProductHierarchies	1.000 0
Product Type				/api/replication/v1/ProductTypes	1.000 0
Region				/api/replication/v1/Regions	1.000 0
UoM				/api/replication/v1/UnitOfMeasures	500 0
UoM Code				/api/replication/v1/UnitOfMeasureIsoCodes	500 0
UoM Dimension				/api/replication/v1/UnitOfMeasureDimensions	500 0

Display View "Services": Overview					
Dialog Structure		Service Group	PLM	Path Prefix	PckgSize WPCount
API Type		Service Group	PLM		
		Services			
Service Id				/api/replication/v1/PackagingCompositions	1.000 0
BOM				/api/replication/v1/PackagingElements	500 0
MCL				/api/replication/v1/PackagingCompositions	500 0
PLM				/api/replication/v1/PackagingCompositions	500 0
RCP				/api/replication/v1/PackagingElements	500 0
UPLOAD_DATA					500 0

WPCount represent the number of Work Processes to be used in parallel when data are sent to RDP for a specific service. WPCount is not editable for all the services except Deliveries and Material Documents.

Please note that transactional data reports (Material document, Delivery) are executing using multiple parallel work processes. The number of work processes to be used can be configure for those services. The maximum recommended number of work processes to be used in parallel is 5:

Display View "Services": Overview					
Dialog Structure		Service Group	DLVR	Path Prefix	PckgSize WPCount
API Type		Service Group	RDP		
		Services			
Service Id				/api/replication/v1/Deliveries	1.000 5
Delivery					

Display View "Services": Overview					
Dialog Structure		Service Group	DOC	Path Prefix	PckgSize WPCount
API Type		Service Group	RDP		
		Services			
Service Id				/api/replication/v1/MaterialDocuments	1.000 5
Material Documents					

Path prefix list for RDP API:

Batch	
Batch	/api/replication/v1/Batches/
Configuration Data	
Country	/api/replication/v1/Countries
Currency	/api/replication/v1/Currencies
Delivery Document Item Category	/api/replication/v1/DeliveryDocumentItemCategories
Delivery Document Type	/api/replication/v1/DeliveryDocumentTypes
Incoterms	/api/replication/v1/Incoterms
Movement Type	/api/replication/v1/MovementTypes
Product Group	/api/replication/v1/ProductGroups
Product Type	/api/replication/v1/ProductTypes

Product Hierarchy	/api/replication/v1/ProductHierarchies
Region	/api/replication/v1/Regions
UoM	/api/replication/v1/UnitOfMeasures
UoM Code	/api/replication/v1/UnitOfMeasureIsoCodes
UoM Dimension	/api/replication/v1/UnitOfMeasureDimensions
Customer Data	
Customers	/api/replication/v1/Customers
Customer Extensions	/api/replication/v1/CustomerExtensions
Delivery	
Delivery	/api/replication/v1/Deliveries
Material Documents	
Material Documents	/api/replication/v1/MaterialDocuments
Organization Data	
Company Code	/api/replication/v1/CompanyCodes
Plant	/api/replication/v1/Plants
Sales Organization	/api/replication/v1/SalesOrganizations
Distribution Channel	/api/replication/v1/DistributionChannels
Division	/api/replication/v1/Divisions
Batch	
Batch	/api/replication/v1/Batches
Product	
Product	/api/replication/v1/Products
Product Extensions	/api/replication/v1/ProductExtensions
Supplier	
Suppliers	/api/replication/v1/Suppliers
Supplier Extensions	/api/replication/v1/SupplierExtensions
Inventory	
Inventory	/api/replication/v1/Inventories
Incoterms	
Incoterms	/api/replication/v1/Incoterms
Billing Document Items	
Billing Document Items	/api/replication/v1/BillingDocumentItem
Supplier Invoice Items	
Supplier Invoice Items	/api/replication/v1/SupplierInvoiceItem

Path prefix list for Packaging Data APIs:

Packaging Data	
BOM	/api/replication/v1/PackagingCompositions
MCL	/api/replication/v1/PackagingElements
PLM	/api/replication/v1/PackagingCompositions
RCP	/api/replication/v1/PackagingCompositions
UPLOAD_DATA	/api/replication/v1/PackagingElements

In case user wants to use V2 of the packaging data API, the path prefix should be adjusted accordingly:

Packaging Data	
BOM	/api/replication/v2/PackagingCompositions
MCL	/api/replication/v2/PackagingElements
PLM	/api/replication/v2/PackagingCompositions

RCP	/api/replication/v2/PackagingCompositions
UPLOAD_DATA	/api/replication/v2/PackagingElements

Path for Packaging composition items (from handling units) is defined in the entity processor class /VPCOE/CL_UPH_TM_HU attribute MC_HU, value '/PackagingCompositionItems'. This value can be overwritten if it's necessary.

Maintain Application Parameters

This section is intended to allow users to maintain different application parameters in one single place:

The screenshot shows the SAP Fiori application 'Change View "Application Parameters": Overview'. On the left, there is a 'Dialog Structure' tree view with nodes like 'API Type', 'Service Group', 'Notifications Recipient', and 'Application Parameters'. The 'Application Parameters' node is selected and highlighted with a red box. To the right is a table titled 'Application Parameters' with columns: 'Name of parameter', 'Multiple Values', and 'Parameter value'. The table contains the following data:

Name of parameter	Multiple Values	Parameter value
DB_CONNECTION	<input type="checkbox"/>	R/3^RDP
ENABLE_TRACE	<input type="checkbox"/>	X
MATERIAL_TYPE	<input checked="" type="checkbox"/>	VERP;ZPCK
MAX_LINES_COUNT	<input type="checkbox"/>	1000000
SOURCE_ID	<input type="checkbox"/>	ECC

Application parameters to be maintained:

MATERIAL_TYPE

This value will be used in selection of packaging products, in product replication report, to be replicated to RDP.

The screenshot shows the SAP Fiori application 'Change View "Application Parameters": Overview'. The 'Dialog Structure' tree view on the left shows the 'Application Parameters' node selected and highlighted with a red box. The table on the right has the 'MATERIAL_TYPE' row selected and highlighted with a red box. The table data is identical to the one in the previous screenshot.

The product report replicates materials with the Material Type maintained in this table, as well as all materials which are extended to any Sales Organizations (regardless of their types) - indicating they are sold.

If multiple Material Types need to be maintained, ensure the **Multiple Values** checkbox is selected, and separate each Material Type with a semicolon (';').

MAX_LINES_COUNT

User can specify within this parameter the maximum value of records to be selected for each variant for material documents replication. Each customer needs to decide the maximum value based on their system parameters. If no value is provided or the parameter is not maintained in the system, integration accelerator will limit the data selection up to 1.000.000 (1 million) records per variant at a time.

SOURCE_ID

Users can maintain Source Id for data to be replicated, in one of the following places:

1. In 'Configuration settings for accelerator services', tcode **SM34**.
Change the parameter value as per your needs:

Display View "Application Parameters": Overview		
Dialog Structure		
API Type	Name of parameter	Parameter value
Service Group	MATERIAL_TYPE	VERP
Services	MAX_LINES_COUNT	1000000
Notifications Recipient	SOURCE_ID	ECC
Application Parameters		

2. In TCode STVARV

Open transaction 'stvarv'. Create new entry:

Name: /VPCOE/RDP_SOURCE_ID

Display Table TVARVC: Selection Variables		
Individual maintenance		
Contents of Table TVARVC		<input type="checkbox"/> Include changed entries in transport request
Parameter		Selection Options
Name	Val	Cas...
/VPCOE/RDP_SOURCE_ID	ECC	
SAP_FAGL_MCA_GENL_LOG_DAYS	10	
SAP_SCMA_DETAIL_LIST		
SAP_SCMA_FISC_YEAR		
SAP_SCMA_PERIOD		
SAP_SCMA_POST_DATE		
SAP_SCMA_POST_PERIOD		
SAP_SCMA_SELV_PROJECT		
SAP_SCMA_TEST_RUN		
SAP_SCMA_VALUE_DATE		

Important Note: Value for the source ID should match the value of the source system created using [Configuration Cockpit](#) application as described [here](#).

The source ID defined in this section it's not valid for handling units replication also. The source id for Handling Units replication it is specified in the selection parameters defined in the report. For more details, please read [handling units replication report selection parameters](#) details.

DB_CONNECTION (Database connection)

This parameter allows the user to specify the secondary database connection to be used when retrieving data for the *Delivery and Material Documents* report. Using a dedicated secondary connection can improve performance, especially when handling large data volumes.

If not specified, the default value is the standard SAP service connection: *R/3*RDP*.

Display View "Application Parameters": Overview

Application Parameters		
Name of parameter	Parameter value	
DB_CONNECTION	R/3*RDP	
MATERIAL_TYPE	VERP	
MAX_LINES_COUNT	1000000	
SOURCE_ID	ECC	

ENABLE_TRACE

This parameter allows the user to specify whether trace logging should be activated for replication reports.

When set to X, the system will record trace information in a temporary table for each object selected for replication — regardless of whether it was successfully sent or skipped.

Name of parameter	Multiple Values	Parameter value
DB_CONNECTION	<input type="checkbox"/>	R/3*RDP
ENABLE_TRACE	<input checked="" type="checkbox"/>	X
MATERIAL_TYPE	<input checked="" type="checkbox"/>	VERP;ZPCK
MAX_LINES_COUNT	<input type="checkbox"/>	1000000
SOURCE_ID	<input type="checkbox"/>	ECC

Usage Considerations:

- This trace can be reviewed using the **/VPCOE/TRACE_MAINTENANCE** report.
- Tracing is useful for troubleshooting and validation of replication runs.
- To avoid performance impact and data buildup, it is recommended to **only activate tracing temporarily** when needed, and to clean up trace data regularly using the maintenance report.

DLV_CATCH_WEIGHT_ON

This parameter allows the user to specify whether catch weight quantities and the delivery catch weight unit of measure should be used instead of the base quantity and base unit of measure for delivery replication reports.

By default, the value is empty (false), meaning the base unit of measure will be used.

When set to X, the delivery replication will replace the base quantity and base unit of measure in the delivery with the sales quantity and sales unit of measure:

- **base_quantity** will be set to the sales quantity (field **LFIMG** in the delivery item).
- **base_unit** will be set to the sales unit (field **VRKME / LFIME** in the delivery item in ECC/S4H).

Important notes:

- Packaging compositions in RDP are defined either in the product base unit of measure or in one of the alternative UoMs that can be converted to the base UoM. Therefore, catch weight quantities are not relevant for RDP (RDP needs the quantity in the base unit of measure).
- Unless there is a specific business reason to send catch weight materials to RDP, the quantities in the base unit of measure should be sent.

Display View "Application Parameters": Overview

Name of Parameter	MultValues	Parameter value
DB_CONNECTION	<input type="checkbox"/>	R/3* RDP
DIV_CATCH_WEIGHT_ON	<input type="checkbox"/>	X
ENABLE_TRACE	<input type="checkbox"/>	X
MATERIAL_TYPE	<input type="checkbox"/>	VERP
MAX_LINES_COUNT	<input type="checkbox"/>	1000000
SOURCE_ID	<input type="checkbox"/>	ECC

Maintain Email Notification Recipients - optional

Change View "Notifications Recipients": Overview

IntUserID	Email	Send to E-mail	Send to Intern...	Send From Email
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	vtalstream@vta.com	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	vtalstream@vta.com

In case of any failed replication in background mode, if email addresses are maintained, emails with the status of failed replications are sent to maintained users. There are two options for sending emails: to ECC internal box or directly to email addresses. Please note that in order emails to be sent out from ECC system, all basis configurations need to be done to allow this.

Create and activate Change Pointers

Through Change Pointer's mechanism if any master data field value is changed in SAP like Material master, Vendor master etc. through standard t-code like MM01, MM02, VA01, VA02, the corresponding records will be created in change pointers tables (BDCP, BDCPS).

RDP Integration package installation does not create the change pointers automatically. Change pointers needs to be created and activated manually.

Services using change pointers mechanism:

- Batch
- Customer
- Supplier
- Product

By default, RDP Integration reports are using specific change pointers listed below. These separate message types below need to be created and it's not recommended to re-use existing message types used in other processes also:

- /VPCOE/BATCH
- /VPCOE/CUSTOMER
- /VPCOE/SUPPLIER
- /VPCOE/PRODUCT

Also please make sure the minimum change items described below are assigned to the corresponding message types.

Follow the steps below to create the change pointers for each of the services and activate them:

1. Create message type (tcode WE81)

Message Type	Short Text
/VPCOE/BATCH	Batch
/VPCOE/CUSTOMER	Customer
/VPCOE/PRODUCT	Product
/VPCOE/SUPPLIER	Supplier

2. Assign change items to message type (tcode BD52)

Assign the table fields to message types which you want to be considered for change pointers generations.

Following are the minimum fields to be assigned for each message type:

Message type:	Object	Table name	Filed name
/VPCOE/BATCH	CHARGE	MCHA	CHARG
	CHARGE	MCHA	HSDAT
	CHARGE	MCHA	KEY
		MCHA	WERKS
	ESSUB	ESTRH	SUBID
	MATERIAL	MARA	MATNR
/VPCOE/PRODUCT	MATERIAL	DMAKT	MAKTX
	MATERIAL	DMARM	KEY
	MATERIAL	MARA	KEY
	MATERIAL	MARA	LVORM
/VPCOE/CUSTOMER	DEBI	KNA1	KEY
	DEBI	KNA1	LOEVM
	DEBI	KNA1	NAME1
	DEBI	KNA1	NAME2
	DEBI	KNA1	NODEL
/VPCOE/SUPPLIER	KRED	LFA1	KEY
	KRED	LFA1	LOEVM
	KRED	LFA1	NAME1
	KRED	LFA1	NODEL

	KRED	LFB1	KEY
--	------	------	-----

3. Activate change pointers generally (tcode BD61)
4. Activate change pointers corresponding to fields in message types (transaction code BD50).
Set Active flag for each of the message type created and Save it.
5. Also check if the data elements of all the required fields have 'change Document' field checked (Below screen shot for Material Number)

Dictionary: Display Data Element

The screenshot shows the SAP Dictionary interface for displaying a data element. The data element 'MATNR' is selected. The 'Change document' checkbox is checked and highlighted with a red box. Other visible fields include 'Short Description' (Material Number), 'Name' (S_MAT1), 'Parameters' (MATNR), 'Parameter ID' (MAT), and 'Default Component Name' (MATERIAL).

Attributes	Data Type	Further Characteristics	Field Label
Search Help			
Name	S_MAT1		
Parameters	MATNR		
Parameter ID	MAT		
Default Component Name	MATERIAL		
<input checked="" type="checkbox"/> Change document			

CONTENT OF RDP INTEGRATION PACKAGE

Once you have done all the above steps successfully, your RDP Integration Accelerator package is ready to use.

Report list and assigned transaction codes included in the integration accelerator package:

Development Package	Report Name	Transaction Code
/VPCOE/COMMON_INTEGRATION	/VPCOE/REPROCESS_PAYLOAD	/VPCOE/REPROCESS
/VPCOE/RDP_INTEGRATION	/VPCOE/BATCH_TO_RDP	/VPCOE/RDP_BATCH
	/VPCOE/CONFIGURATION_TO_RDP	/VPCOE/RDP_CONF
	/VPCOE/ORG_DATA_TO_RDP	/VPCOE/RDP_ORG_DATA
	/VPCOE/PRODUCT_TO_RDP	/VPCOE/RDP_PRODUCT
	/VPCOE/CUSTOMER_TO_RDP	/VPCOE/RDP_CUSTOMER
	/VPCOE/SUPPLIER_TO_RDP	/VPCOE/RDP_SUPPLIER
	/VPCOE/DELIVERY_TO_RDP	/VPCOE/RDP_DELIVERY
	/VPCOE/MAT_DOC_TO_RDP	/VPCOE/RDP_MAT_DOC
	/VPCOE/BILDOCITEMS_TO_RDP	-
	/VPCOE/SUPPLINVITEMS_TO_RDP	-
	/VPCOE/INVENTORY_TO_RDP	/VPCOE/RDP_INVENTORY
	/VPCOE/INCOTERMS_TO_RDP	/VPCOE/RDP_INCOTERMS
	/VPCOE/TO_RDP	/VPCOE/RDP
/VPCOE/PLM_INTEGRATION	/VPCOE/R_UPH_PCKG_CMP_PLM_LOAD	/VPCOE/UPH_PC_PLM
	/VPCOE/R_UPH_PCKG_CMP_RCP_LOAD	/VPCOE/UPH_PC_RCP
	/VPCOE/R_UPH_PCKG_DATA_LOAD	/VPCOE/UPH_PE_PLM

/VPCOE/OBJ_INTEGRATION	/VPCOE/R_UPH_PCKG_MCL_LOAD /VPCOE/R_UPH_PCKG_CMP_BOM_LOAD /VPCOE/R_PCKG_CMP_HU_LOAD	/VPCOE/UPH_PE_MCL /VPCOE/UPH_PC_BOM /VPCOE/HU
/VPCOE/RDP_PCKGFEE_INTEGRATION	/VPCOE/R_PCKF_POSTING /VPCOE/R_PCKF_RETRIEVAL /VPCOE/R_PCKF_CUSTOMER_ROLE /VPCOE/R_PCKF_CUSTOM_EXEMPT /VPCOE/R_PCKF_COMP_CODE_EXEM	/VPCOE/PCKF_POSTING /VPCOE/PCKF_RETRIEVE /VPCOE/PCKF_CUS_ROLE /VPCOE/PCKF_CUS_EXMP /VPCOE/PCKF_CC_EXMP

Transaction code /VPCOE/RDP has been created to run the general report /VPCOE/TO_RDP. If it's necessary, please create your own custom role with following authorizations and assign it to specific users to allow them to execute the transaction.

Authorization needed to execute TCode /VPCOE/RDP (in foreground mode):

Object	Field Name	From	To Activity
S_TCODE	TCD	/VPCOE/RDP	
S_ADMI_FCD	S_ADMI_FCD		ST0M
S_GUI	ACTVT		61
S_ALV_LAYO	ACTVT		23
W_BETR_USR	ACTVT		03
W_BETR_USR	WERKS	*	
M_MSEG_WMB	ACTVT		03
M_MSEG_WMB	WERKS	*	
M_MATE_MAR	ACTVT		03
M_MATE_MAR	BEGRU		
M_MATE_MAT	ACTVT		03
M_MATE_MAT	BEGRU		
M_MATE_WGR	ACTVT		03
M_MATE_WGR	BEGRU		
K_KEKO	ACTVT		03
K_KEKO	BUKRS	*	
K_KEKO	KLVAR		

Please note that exact authorization setup can vary from customer to customer, and security team can determine and setup the roles with all authorizations required.

Authorization needed to run the reports in background mode is needed for the transaction code for each specific report.

HOW TO REPLICATE DATA TO RDP

RDP Integration reports will extract needed data from your system, pack the data in the required format, and send them to RDP.

RDP Integration interfaces will support two scenarios to load the data (excepting organization and configuration data which only supports Initial load):

- Initial Load** – In this case, all the objects selected based on filters criteria will be sent to RDP
- Delta Load** – In this case, all changed (new, changed) business object instances from the last load will be sent to RDP.

The below steps describe how you can use the integration accelerator to load data into the RDP.

RDP ERP Integration reports

Each report in the package, for each service id, can be executed individually using transaction code SE38 or in background mode.

For a proper replication we propose to follow the extraction of the data in the following order for an initial replication:

Initial data replication - sequence



For delta load replication, you can consider daily or monthly replication or depending on your needs:

Delta data replication - sequence



Also, one general report for RDP ERP is available, /VPCOE/TO_RDP which helps you to load the data to RDP for all services available from one single place. Transaction code /VPCOE/RDP has been created to execute /VPCOE/TO_RDP report.

General Approach for Loading Data

The RDP Integration Accelerator provides multiple options for loading data into **SAP Responsible Design and Production (RDP)**. The approach varies depending on the type of data being processed and the desired load method.

Initial Load

- All objects selected based on the defined filter criteria are sent to RDP.
- For all entities, a new import overwrites and deletes the existing data in RDP.

Get Only Delta Flag

- Extracts delta data based on **change pointers** or **specific report logic**.
- Only newly created or modified objects are selected and sent to RDP.

Preview Mode

- Displays the data that would be sent to RDP based on the selection criteria without transferring the data.
- The results are shown on the screen after executing the report.

Test Mode

- **Available for packaging data reports.**
- When the **Test Mode** checkbox is selected, the data extraction and mapping processes remain the same, but the transfer of data to the RDP API is skipped.
- Test Mode is supported in both **initial load** and **delta load** scenarios.

Export to XLSX File

- Allows the generation of an Excel file based on the selected criteria.
- The exported data can be used with the **Data Import** application in RDP.
- Note: The number of records exported to the XLSX file is limited to **50,000**.

Selection ID

- Whenever an **initial load** or **delta load** is successfully performed, the selection parameters along with the current date are saved.
- This saved **Selection ID** is used to determine the next delta load.
- The last usage date of the Selection ID is also recorded for reference.

Reports with Specific Load Functionality

Reports Without Delta Load Functionality

The following reports do not support **delta load** functionality. If data changes occur, a re-execution of the **initial load** is required:

- **/VPCOE/CONFIGURATION_TO_RDP** – Configuration data replication.
- **/VPCOE/ORG_DATA_TO_RDP** – Organization data replication.
- **/VPCOE/INCOTERMS_TO_RDP** – Incoterms data replication.

Reports Using Change Pointers for Delta Load

The following reports use **change pointers** to identify and replicate all new or changed objects since the last replication:

- **/VPCOE/BATCH_TO_RDP** – Batch data replication.
- **/VPCOE/PRODUCT_TO_RDP** – Product data replication.
- **/VPCOE/CUSTOMER_TO_RDP** – Customer data replication.

- **/VPCOE/SUPPLIER_TO_RDP** – Supplier data replication.

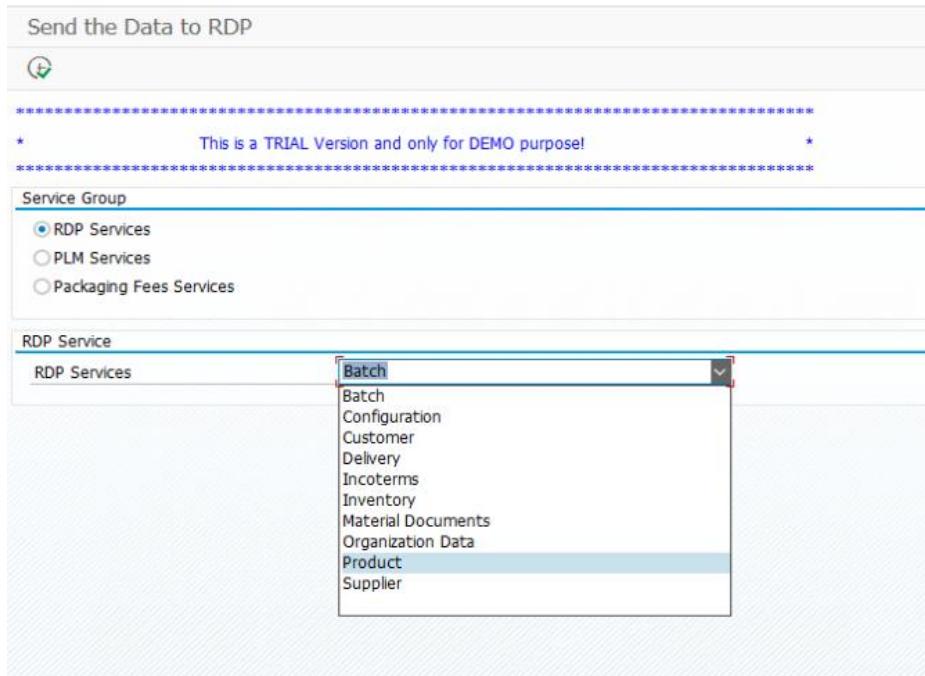
Reports with Delta Load Logic

The following reports do not rely on change pointers and instead apply their own logic to determine delta data:

- **/VPCOE/DELIVERY_TO_RDP** – Delivery data replication.
- **/VPCOE/MAT_DOC_TO_RDP** – Material documents replication.
- **/VPCOE/INVENTORY_TO_RDP** – Inventory data replication.

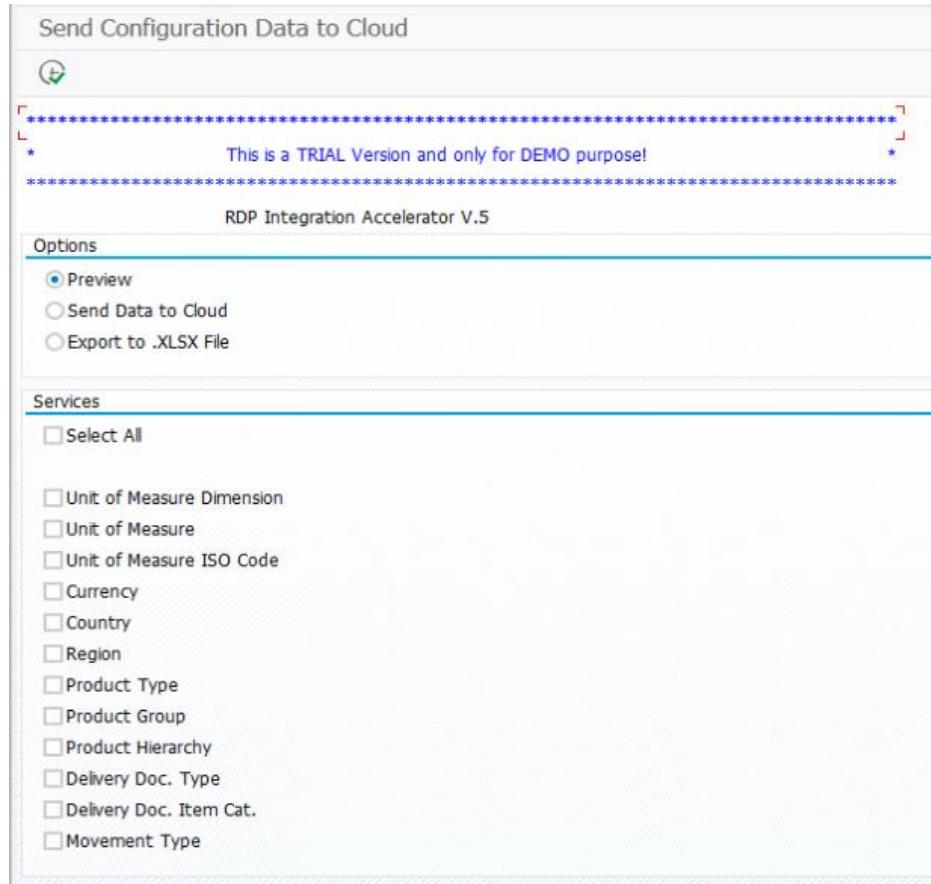
Open transaction code /VPCOE/RDP.

Select necessary service group and service name and execute the report:



Loading Configuration data

Open transaction code VPCOE/RDP and select service ID 'Configuration' (alternatively you can run the report /VPCOE/CONFIGURATION_TO_RDP):



Executing the Configuration report you can load specific configuration data related to:

- Unit of Measure
- Unit of Measure Dimension
- Unit of Measure ISO Code
- Currency
- Country
- Region
- Product Type
- Product Group
- Product Hierarchy
- Delivery Document Type
- Delivery Document Item Category
- Movement Type

Note: You can select all the services or only needed ones in order to send the data to RDP.

Note: Internal units of measure will be sent to RDP.

Loading Incoterms

Open transaction code VPCOE/RDP and select service ID 'Incoterms' (alternatively you can run the report /VPCOE/INCOTERMS_TO_RDP):

Send Incoterms to Cloud

This is a TRIAL Version and only for DEMO purpose!

RDP Integration Accelerator V.5

Options

- Preview
- Send Data To Cloud
- Export to .XLSX File

Loading Organization data

Open transaction code VPCOE/RDP and select service ‘Organization data’ (alternatively you can run the report /VPCOE/ORG_DATA_TO_RDP):

Send Organization Data to RDP

This is a TRIAL Version and only for DEMO purpose!

RDP Integration Accelerator V.5

Options

- Preview
- Send Data to Cloud
- Export to .XLSX File

Selection Parameter

Select All

- Company Code
- Plant
- Sales Organization
- Distribution Channel
- Division
- Sales Area

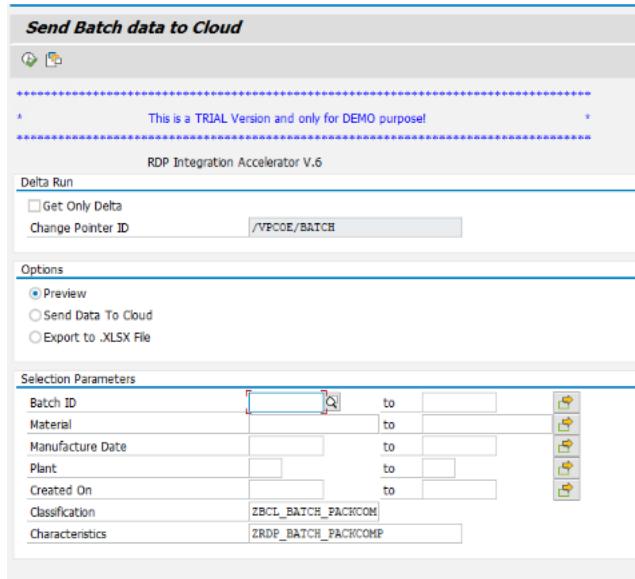
Executing the Organization data report you can load specific organization data related to:

- Company Code
- Plant
- Sales Organization
- Distribution Channel
- Division
- Sales Area

Note: You can select all the services or only needed ones in order to send the data to RDP.

Loading Batch data

Open transaction code VPCOE/RDP and select the service ‘Batch data’ (alternatively you can run the report /VPCOE/BATCH_TO_RDP):



Initial Load Approach

The initial load extracts and transfers all relevant batch data based on the defined selection criteria. The process includes:

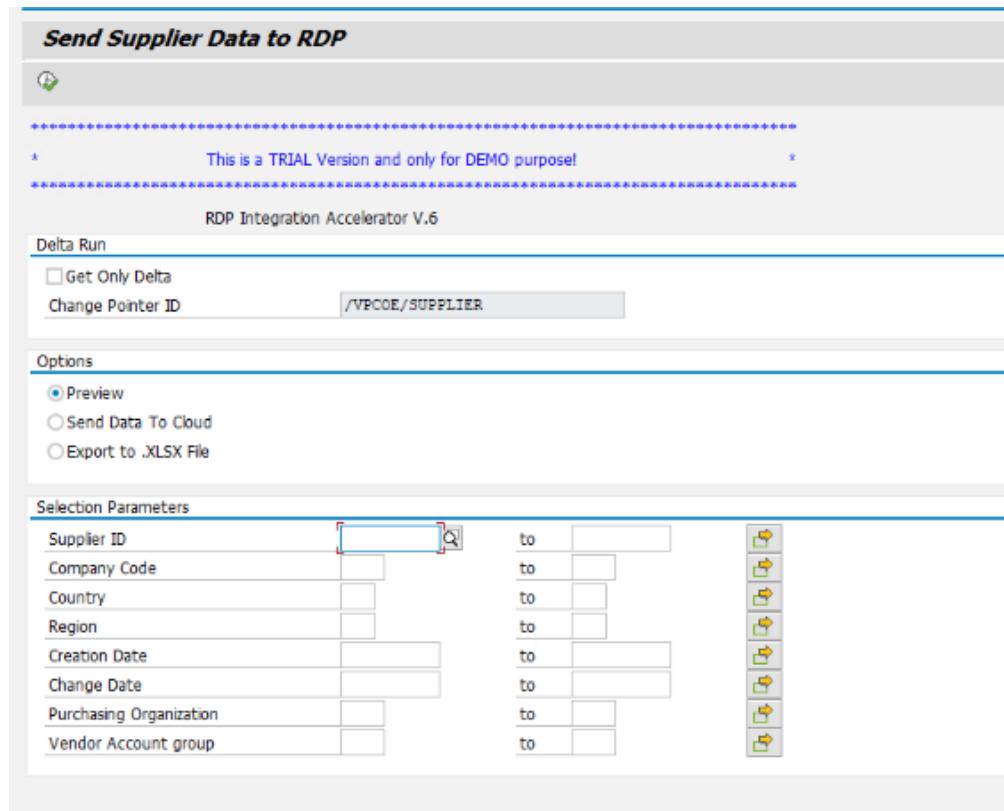
- Selection of all batch data based on specified filters.
- Determination of Packaging Composition in Batch:
 - The report identifies all batches matching the existing filter criteria for classes and characteristics.
 - If a batch contains a characteristic entry related to Packaging Composition ID, the corresponding characteristic value is retrieved.
 - For batches with an entry in classes and characteristics, the Packaging Composition ID is additionally transferred to RDP.
 - The identified Packaging Composition is additionally replicated.

Delta Load Approach

- The Delta Load functionality operates based on Change Pointers, ensuring that only newly created or modified batch data is selected.
- The system identifies changes using the defined change pointer logic and replicates the relevant updates to RDP.

Loading Supplier data

Open transaction code VPCOE/RDP and select service 'Supplier' (alternatively you can run the report /VPCOE/SUPPLIER_TO_RDP):



Initial Load Approach

During the initial load, all relevant supplier data is extracted and transferred to RDP based on the specified selection criteria:

- All suppliers matching the defined filters are selected and sent to RDP.
- Suppliers **marked as deleted** are also included in the replication to ensure data consistency. This is a requirement/recommendation on RDP.

Delta Load Approach

- The **Delta Load** functionality is based on **Change Pointers**, ensuring that only newly created, modified, or deleted suppliers are selected for replication.
- All selection parameters remain available in delta load mode, allowing users to **restrict the scope of data replication** as needed.

Tax Number and Tax Code Selection Logic for Supplier Data

During supplier (vendor) replication, tax number and tax code are selected and transferred to RDP. The selection logic depends on the system configuration and whether **Customer Vendor Integration (CVI)** is active:

Logic to Select Tax Number:

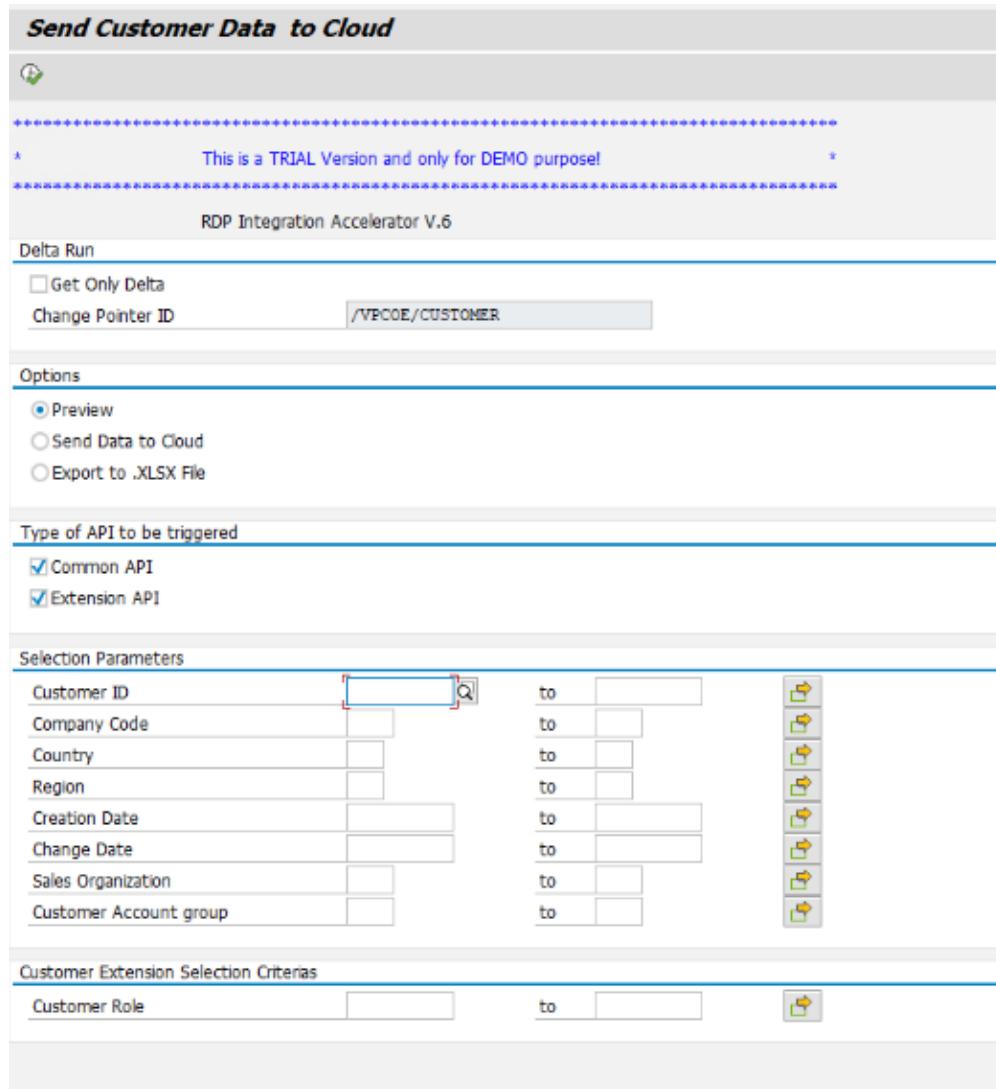
- **If CVI is active:**
 - Tax number is selected from:
 - **DFKKBPTAXNUM-TAXNUM** or
 - **DFKKBPTAXNUM-TAXNUMXL**
- **If CVI is not active:**
 - Tax number is selected from:
 - **LFA1-STCEG** or
 - **LFAS-STCEG**

Note:

- The usage of **VAT registration codes and tax numbers** in customer/vendor master data may vary depending on country-specific tax regulations and the organization's specific requirements.
- If the default selection logic does not meet the organization's requirements, a **BAdI implementation** is available to **overwrite the logic** for tax number selection.

Loading Customer and Customer Extension data

Open transaction code VPCOE/RDP and select service 'Customer' (alternatively you can run the report /VPCOE/CUSTOMER_TO_RDP):



You can choose between two types of APIs based on the required data:

- **Common API** – Select this checkbox to send **customer data** based on the defined selection criteria to RDP.
- **Extension API** – Select this checkbox to send **additional attributes** based on the selection criteria, as implemented in the BAdI.
 - For details on extending functionality, refer to the [Extensibility](#) section.

Initial Load Approach

During the initial load, all relevant customer data is extracted and transferred to RDP:

- All customers matching the defined filters are selected and sent to RDP.

- Customers **marked as deleted** are also included in the replication to ensure data consistency.

Delta Load Approach

- The **Delta Load** functionality is driven by **Change Pointers**, ensuring that only newly created, modified, or deleted customer records are selected.
- Selection can be further refined using selection filters to optimize data extraction.
- All selection fields are available in delta load mode, allowing users to **restrict data selection** as needed.

Loading Customer extension data

- To load **Customer Extension Data**, select the **Extension API** checkbox.
- For further information, refer to the [Extensibility capabilities for RDP Integration reports](#).

Sample BAdI Implementation for Customer Extensions

The sample BAdI implementation follows RDP recommendations for defining classes and characteristics as follows:

Class	ZCCL_RDP_CUST_EXT
Description	RDP specific Customer Attributes
Class Type	011

Characteristics	Description	Data Type	Length	Decimal	UoM / Values
ZRDP_CUST_EXT_ROLE	Customer Role	CHAR	10	0	Code List
ZRDP_PROD_EXT_TAG	Customer Tag	CHAR	10	0	Customer defined code list

Tax Number and Tax Code Selection Logic

During customer replication, tax number and tax code are selected and transferred to RDP. The selection logic depends on the system configuration:

- If CVI is active** in ECC (and in S/4H):
 - Tax number is selected from **DFKKBPTAXNUM-TAXNUM** or **DFKKBPTAXNUM-TAXNUMXL**.
- If CVI is not active**:
 - Tax number is selected from **KNA1-STCEG** or **KNAS-STCEG**.

Note:

The usage of VAT registration codes and tax numbers in customer/vendor master data can vary depending on country-specific tax regulations and organizational requirements.

If customization is required, use the **available BAdI** to overwrite the default logic for tax number selection.

Please use the BAdI available if you need to overwrite the above logic for tax number information based on your specific needs.

Loading Product and Product extension data

Open transaction code VPCOE/RDP and select service 'Product' (alternatively you can run the report /VPCOE/PRODUCT_TO_RDP):

Send Product Master Data to RDP

The screenshot shows the configuration screen for sending product master data to RDP. It includes sections for Delta Run (Get Only Delta, Change Pointer ID /VPCOE/PRODUCT), Options (Preview selected), Type of API to be triggered (Common API and Extension API selected), Product Selection Criteria (Material, Material Type, Material Group, Last Change, Valid From, Sales Organization, Plant, Cross-Plant Status, Cross-Plant Status Valid From), and Product Extension Selection Criteria (Product Content, Product Type Harmonized).

You can choose between two types of APIs based on the required data:

- **Common API** – Select this checkbox to send **product data** based on the defined selection criteria to RDP.
- **Extension API** – Select this checkbox to send **additional attributes** based on the selection criteria, as implemented in the BAdI.
 - For more information on extending functionality, refer to the [Extensibility section](#)

Initial Load Approach

During the initial load, all relevant product data is extracted and transferred to RDP:

- All products matching the defined filters are selected and sent to RDP.

Delta Load Approach

- The **Delta Load** functionality is based on **Change Pointers**, ensuring that only newly created, modified, or deleted product records are selected.
- The system identifies changes using the change pointers mentioned on the selection screen and applies the **Last Change Date** filters defined in the **Product Selection Criteria**.
- **All products, including deleted products**, are included in the replication to ensure data consistency.

Note:

- **Packaging materials** are sent to RDP if either of the following conditions is met:

- The material's **type matches** an entry in the **customizing table** for packaging material types.
- The customizing table is **empty**, and the material type is equal to "**VERP**" (standard packaging material type).
- **Sold materials** are always sent to RDP, regardless of their material type, **if they are maintained in any Sales Organization** — i.e., if the material has an entry in the **MVKE table**.

Loading Product extension data

- to load **Product Extension Data**, select the **Extension API** checkbox.
- For further information, refer to the [Extensibility capabilities for RDP Integration reports](#).

Loading Deliveries

Open transaction code VPCOE/RDP and select service 'Delivery' (alternatively you can run the report /VPCOE/DELIVERY_TO_RDP):

The screenshot shows the 'Send Delivery to RDP' transaction interface. At the top, it says 'This is a TRIAL Version and only for DEMO purpose!'. Below that, it displays 'RDP Integration Accelerator V.6' and 'Delta Run' with an unchecked 'Get Only Delta' checkbox. In the 'Options' section, there is a checked 'Send Related Customers before' checkbox, a 'Selection Id' field containing 'DLVR-Delivery-20250311', and a radio button for 'Preview' which is selected. There are also options for 'Send Data to Cloud' and 'Export to .XLSX File'. The 'Billing Document Items' section contains an unchecked 'Get Billing Document Items' checkbox. The 'Selection Parameters' section lists various fields with dropdown menus and 'to' fields: Delivery Type, Sales Organization, Ship-to Party, Ship-to Country, Region, Item Category, Distribution Channel, Division, Delivery Number, Actual Goods Movement Date, Delivery Plant Country, and Material. The 'Selection Dates' section includes fields for 'Created on' and 'Changed on' with 'to' fields and calendar icons. The 'Options' section at the bottom has a 'Sold-to party' field with a 'to' field and a calendar icon.

Initial load approach:

- all the deliveries selected based on filters criteria will be sent to RDP. Please note only deliveries with status 'Completely Process' are considering for replication.
- by selecting 'Send related customer before' checkbox, all the related customers according to selection criteria and for the change pointers specified will be also sent to RDP
- all deleted deliveries will be sent to RDP

'Send related customer before' option behavior:

When the “**Send related customers before**” option is selected in the Delivery replication report, only **delta customers** (i.e., customers created or changed since the last replication) that are **directly related to the selected deliveries** will be included and sent prior to the delivery data.

This option is **not intended** to serve as a replacement for full customer replication. Users should continue to use the **Customer report** to replicate all in-scope customer master data. The purpose of this option is to ensure that any new or updated customers linked to the deliveries being replicated are also sent, avoiding data dependency errors during delivery processing.

With this behavior:

- Newly created or updated customers since the last customer replication, **and** who are involved in the selected deliveries, will be picked up and replicated.
- No unrelated or unchanged customers will be included, helping to keep the replication scope precise and efficient.

Send Delivery to RDP

RDP Integration Accelerator v6.0.4

Get Only Delta

Options

Selection Id: DLVR-Delivery-20250904

Preview
 Send Data to Cloud
 Send Deliveries
 Send Billing Documents
 Send Related Customers before
 Change Pointer ID for Customer: /VPCOE/CUSTOMER
 Export to .XLSX File

Billing Document Items

Get Billing Document Items

Selection Parameters

Delivery Type	to	<input type="button"/>	
Sales Organization	to	<input type="button"/>	
Ship-to Party	to	<input type="button"/>	
Ship-to Country	<input type="button"/>	to	<input type="button"/>
Region	to	<input type="button"/>	
Item Category	to	<input type="button"/>	
Distribution Channel	to	<input type="button"/>	
Division	to	<input type="button"/>	
Delivery Number	to	<input type="button"/>	
Actual Goods Movement Date	to	<input type="button"/>	
Delivery Plant Country	to	<input type="button"/>	
Material	to	<input type="button"/>	

Selection Dates

Created on: to:
 OR
 Changed on: to:

Options

Sold-to party: to:

Delta load approach for Delivery documents report:

- All the objects selected from last successful replication, will be sent to RDP. Please note only deliveries with status ‘Completely Process’ are considering for delta replication.
 - Some filter criteria become unchangeable, to assure delta load consistency for all filters combinations used before
- When an initial load is successfully executed, the selection parameters used for initial load are saved into so called ‘Selection ID’ together with selection parameters and creation date/change date.

- The **Delivery Document Created Date/Changed Date** is predefined programmatically in this case. These values contain the date since the next Delta can be retrieved up to current date. In this way, all the new created/posted documents after last successful replication till current date will be selected for delta load.

Send Delivery to RDP

* This is a TRIAL Version and only for DEMO purpose! *

RDP Integration Accelerator V.5

Delta Run

Get Only Delta
Previous Selection Id: DLVR-Delivery-20220126

Options

Send Related Customers before
Change Pointer ID for Customer: /VPCOE/CUSTOMER
 Preview
 Send Data to Cloud
 Export to .XLSX File

Selection Parameters

Delivery Type	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Sales Organization	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Ship-to Party	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Ship-to Country	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Region	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Item Category	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Distribution Channel	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Division	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Delivery Number	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Actual Goods Movement Date	<input type="text"/>	to <input type="text"/>	<input type="button"/>
Delivery Plant Country	<input type="text"/>	to <input type="text"/>	<input type="button"/>

Selection Dates

Created on	<input type="text" value="26.01.2022"/>	to <input type="text" value="25.01.2024"/>	<input type="button"/>
OR			
Changed on	<input type="text" value="26.01.2022"/>	to <input type="text" value="25.01.2024"/>	<input type="button"/>

Sold-to party to

Catch Weight Materials:

When Catch Weight is enabled in system, the quantity may vary from product to product. In such cases, the parallel unit of measure can be used. Therefore, the quantity will differ from standard materials.

For Catch Weight materials, the following mapping will be applied for delivery items:

- The base_quantity will be set to the sales quantity (field LFIMG in delivery item).
- The base_unit will be set to the sales unit (field VRKME/LFIME in delivery item in ECC/S4H).

Loading Material documents

Open transaction code VPCOE/RDP and select service 'Material Documents' (alternatively you can run the report /VPCOE/MAT_DOC_TO_RDP):

Send Material Documents to RDP

The screenshot shows the RDP Integration Accelerator v6.0.4 interface with the following sections:

- Variants:** Includes an option to "Get Only Delta".
- Options:** Selection Id is set to "DOC-Material Documents-20250909". Preview is selected.
- Billing Document Items:** Includes an option to "Get Billing Document Items".
- Supplier Invoice Items:** Includes an option to "Get Supplier Invoice Items".
- Selection Parameters:** A grid of fields for filtering documents based on various criteria like Country, Posting Date, Plant, etc., each with a dropdown and a "to" field.
- Variants:** A list of checked options for goods receipt variants:
 - Goods Receipt with Production Order reference in specific country
 - Goods Receipt with Stock Transfer reference imported in specific country
 - Goods Receipt with Stock Transfer reference in specific country (domestic)
 - Goods Issue with Stock Transfer reference exported from specific country
 - Goods Issue with Stock Transfer reference in specific country (domestic)
 - Goods Receipt with Purchase order reference imported in specific country
 - Goods Receipt with Purchase order reference in specific country (domestic)

All the goods movements according to selection criteria will be selected. Country is a mandatory selection filter. Selected country can represent Ship From and/or Ship To country, depending on the variant selected.

Group 1: Goods Receipt with Production Order reference in specific country

All goods receipts will be replicated with manufacturing order reference, but no supplier and customer reference and not from a stock transfer.

Group 2: Goods Receipt with Stock Transfer reference imported in specific country

All goods receipt with stock transfer reference imported in selected country will be replicated.

Group 2b: Goods Receipt with Stock Transfer reference in specific country (domestic)

All goods receipt with stock transfer reference within same country will be replicated.

Group 3: Goods Issue with Stock Transfer reference exported from specific country

All goods issue with stock transfer reference exported from selected country will be replicated.

Group3b: Goods Issue with Stock Transfer reference in specific country (domestic)

All goods issue with stock transfer reference within same country will be replicated.

Group 4: Goods Receipt with Purchase order reference imported in specific country

All goods receipt with purchased order reference imported in specific country and not from a stock transfer.

Group 5: Goods Receipt with Purchase order reference in specific country (domestic)

All goods receipt with reference to Purchase order within the same country (Domestic procurement).

Initial load approach for Material documents report:

- All the objects selected based on filters criteria and for variant(s) selected will be sent to RDP
- If the **Billing Documents** and/or **Invoice Documents** checkboxes are selected, the system retrieves the respective documents based on the defined selection criteria.
- **Country Restriction:** Billing documents and invoice item documents are **selected only for Spain country**.

Send Material Documents to RDP

RDP Integration Accelerator V.6

Variants

Get Only Delta

Options

Selection Id: DOC-Material Documents-20250313

Preview
 Send Data to Cloud
 Export to .XLSX File

Billing Document Items

Get Billing Document Items

Billing Document Country	ES	to	[]	[]
Billing Document	[]	to	[]	[]
Billing Document Date	[]	to	[]	[]
SD Document Category	[]	to	[]	[]

Supplier Invoice Items

Get Supplier Invoice Items

Supplier Invoice Country	ES	to	[]	[]
Supplier Invoice	[]	to	[]	[]
Supplier Invoice Item	[]	to	[]	[]
Company Code	[]	to	[]	[]
Supplier Invoice Plant	[]	to	[]	[]
Fiscal Year	[]	to	[]	[]

Selection Parameters

Country	[]	[]	[]	[]
Posting Date	[]	to	[]	[]
Material Document Year	[]	to	[]	[]
Plant	[]	to	[]	[]
Material Document	[]	to	[]	[]
Movement Type	[]	to	[]	[]
Material	[]	to	[]	[]

Variants

Goods Receipt with Production Order reference in specific country
 Goods Receipt with Stock Transfer reference imported in specific country
 Goods Receipt with Stock Transfer reference in specific country (domestic)
 Goods Issue with Stock Transfer reference exported from specific country
 Goods Issue with Stock Transfer reference in specific country (domestic)
 Goods Receipt with Purchase order reference imported in specific country
 Goods Receipt with Purchase order reference in specific country (domestic)

Delta load approach for Material documents report:

- All the objects selected (based on posting date) from last load, will be sent to RDP
- Some filter criteria become unchangeable, to assure delta load consistency for all filters combinations used before

When an initial load is successfully executed, the selection parameters used for initial load are saved into so called 'Selection ID' together with selection parameters and creation date/posting date.

- The **Material Document Posting Date** is predefined programmatically in this case. These values contain the date since the next Delta can be retrieved up to current date. In this way, all the new posted documents after last successful replication till current date will be selected for delta load.

Send Material Documents to RDP

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RDP Integration Accelerator V.5

Variants

<input checked="" type="checkbox"/> Get Only Delta	Previous Selection Id	DOC-Material Documents-20220913	Delete Current Selection ID
		Delete all Selection IDs	

Options

Preview
 Send Data to Cloud
 Export to .XLSX File

Selection Parameters

Country	US	to	<input type="button"/>
Posting Date	15.01.2024	to	25.01.2024
Material Document Year	<input type="button"/>	to	<input type="button"/>
Plant	<input type="button"/>	to	<input type="button"/>
Material Document	<input type="button"/>	to	<input type="button"/>
Movement Type	<input type="button"/>	to	<input type="button"/>

Variants

Goods Receipt with Production Order reference in specific country
 Goods Receipt with Stock Transfer reference imported in specific country
 Goods Receipt with Stock Transfer reference in specific country (domestic)
 Goods Issue with Stock Transfer reference exported from specific country
 Goods Issue with Stock Transfer reference in specific country (domestic)
 Goods Receipt with Purchase order reference Imported in specific country
 Goods Receipt with Purchase order reference in specific country (domestic)

Important Notes for Material Documents Loading

- Stock Type and Specialized Stock Type:**

Goods movement data are not restricted based on stock type or specialized stock type. All relevant data is extracted and transferred without applying stock-specific restrictions.

- Emergency Corrections:**

If an emergency correction is performed after data extraction, it is recommended to re-execute the initial load to ensure that corrected data is transferred to RDP.

- Data Overwrite During Import:**

For all material documents, a new import will overwrite and delete the existing data in RDP. User needs to ensure that the most accurate data is reloaded when necessary.

- No link between the documents of a **two step stock transfer** (with movement types 303/313 and 305/315).

- According to [SAP Note 1800451](#), there is no direct system link to a referenced material document in standard SAP logic/tables.

- Even using the **movement type directly** does not help in determining the reference document.
- SAP recommends populating either the **Document Header Text (MKPF-BKTXT)** or the **Item Text (MSEG-SGTXT)** field with the reference material document number.
- This reference can be **automatically maintained by customers** using an **exit in standard transactions**.
- Without maintaining this reference, it is **not possible to identify referenced documents** in cases where the material document has **no order reference**.
- In the context of the **RDP Integration Accelerator**, we recommend that customers maintain the **MSEG-SGTXT** field with the reference material document number using a custom **user exit**.
- If this approach is implemented, the accelerator will be able to **extract reference documents** reliably based on the maintained text field.

- **Handling Movement Types 301, 303, 305 in Material Documents**

During the loading of **material documents**, the Integration Accelerator retrieves relevant data from the source system and processes it according to predefined conditions. Standard filters and mapping rules are applied to ensure accurate and consistent data replication.

Default Behavior for Movement Types

- By default, the Integration Accelerator does not use movement types as selection criteria.
- However, **movement types 301, 303, and 305** are included in the standard logic to ensure correct data selection and replication.
- If a customer has defined **custom movement types (Z-types)** corresponding to any of these standard movement types (**301, 303, or 305**), they must be explicitly specified in the BAdI implementation using the method:

/VPCOE/IF_ADJ_DATA_RETRIEVAL~DEFINE_MOVEMENT_TYPE

When to Use This Method:

- **Custom Movement Types Exist** – If custom movement types replace standard movement types (**301, 303, or 305**) and need to be considered during data selection.
- **Ensuring Correct Data Selection** – To apply the appropriate selection conditions for these custom movement types.

No Implementation of this method is required if:

- No custom movement types exist for **301, 303, and 305**.

For more details on badi implementation example please have a look in the method itself of sample class implementation and [here](#).

Loading Billing Document Items and Supplier Invoice Items

For loading billing document items and supplier invoice items, the existing reports for material documents and delivery replication should be used.

User needs to select the respective checkboxes available to select and send billing documents and/or invoice document items for respective material documents selected. Only the matching objects will be replicated.

Material documents:

Send Material Documents to RDP

This is a TRIAL Version and only for DEMO purpose!

RDP Integration Accelerator V.5

Variants

Get Only Delta

Options

Selection Id: DOC-Material Documents-20240627

Preview
 Send Data to Cloud
 Export to .XLSX File

Billing Document Items

Get Billing Document Items

Billing Document Country	ES	to	<input type="checkbox"/>	
Billing Document	<input type="text"/>	to	<input type="checkbox"/>	
Billing Document Date	<input type="text"/>	to	<input type="checkbox"/>	
SD Document Category	<input type="text"/>	to	<input type="checkbox"/>	

Supplier Invoice Items

Get Supplier Invoice Items

Supplier Invoice Country	ES	to	<input type="checkbox"/>	
Supplier Invoice	<input type="text"/>	to	<input type="checkbox"/>	
Supplier Invoice Item	<input type="text"/>	to	<input type="checkbox"/>	
Company Code	<input type="text"/>	to	<input type="checkbox"/>	
Supplier Invoice Plant	<input type="text"/>	to	<input type="checkbox"/>	
Fiscal Year	<input type="text"/>	to	<input type="checkbox"/>	

Selection Parameters

Country	<input type="text"/> @ ... *	<input type="button"/>	<input type="checkbox"/>	
Posting Date	20.02.2024	to	27.06.2024	<input type="checkbox"/>
Material Document Year	<input type="text"/>	to	<input type="checkbox"/>	
Plant	<input type="text"/>	to	<input type="checkbox"/>	
Material Document	<input type="text"/>	to	<input type="checkbox"/>	
Movement Type	<input type="text"/>	to	<input type="checkbox"/>	
Material	<input type="text"/>	to	<input type="checkbox"/>	

Variants

- Goods Receipt with Production Order reference in specific country
- Goods Receipt with Stock Transfer reference imported in specific country
- Goods Receipt with Stock Transfer reference in specific country (domestic)
- Goods Issue with Stock Transfer reference exported from specific country
- Goods Issue with Stock Transfer reference in specific country (domestic)
- Goods Receipt with Purchase order reference imported in specific country
- Goods Receipt with Purchase order reference in specific country (domestic)

Deliveries:

Send Delivery to RDP

This is a TRIAL Version and only for DEMO purpose!

RDP Integration Accelerator V.5

Delta Run

Get Only Delta

Options

Send Related Customers before

Selection Id: DLVR-Delivery-20240627

Preview

Send Data to Cloud

Export to .XLSX File

Get Billing Document Items

Billing Document Country	ES	to	<input type="checkbox"/>
Billing Document		to	<input type="checkbox"/>
Billing Document Date		to	<input type="checkbox"/>
SD Document Category		to	<input type="checkbox"/>

Selection Parameters

Delivery Type		to	<input type="checkbox"/>
Sales Organization		to	<input type="checkbox"/>
Ship-to Party		to	<input type="checkbox"/>
Ship-to Country		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Region		to	<input type="checkbox"/>
Item Category		to	<input type="checkbox"/>
Distribution Channel		to	<input type="checkbox"/>
Division		to	<input type="checkbox"/>
Delivery Number		to	<input type="checkbox"/>
Actual Goods Movement Date		to	<input type="checkbox"/>
Delivery Plant Country		to	<input type="checkbox"/>
Material		to	<input type="checkbox"/>

Selection Dates

Created on		to	<input type="checkbox"/>
OR			
Changed on		to	<input type="checkbox"/>

This replication for additional Billing documents/Supplier Invoices is required **only for Spanish customers** therefore replication for billing documents/invoices are restricted to only documents related to Spain (therefore Billing Document Country and Supplier Invoice Country pre-defaulted with 'ES' value) and only for documents with status Posted.

Supplier invoices and billing documents information for the transactional documents will be selected accordingly as below:

- A reference to **Supplier Invoice** with link to Material document for:
 - *Goods Receipts with Purchase Order reference imported in Specific country where*
 - Country <> ES and ShipToCountry = ES
 - *Goods Receipts with Purchase Order reference in specific country (domestic) where*
 - ShipFromCountry = ES and ShipToCountry = ES
- A reference to **Billing Document** with link to material document for:
 - *Goods Receipts with Stock Transfer reference imported in specific country where*

- ShipFromCountry <> ES and ShipToCountry = ES
 - ReferenceSDDocumentCategory = Delivery (J) , Reversal (T)
 - billings document posting status VBRK-RFBSK = C, H (C-“Posting document has been created”; H- “Posted via invoice list”)
- *Goods Issue with Stock Transfer exported from Specific country where*
 - ShipFromCountry = ES and ShipToCountry <> ES
 - ReferenceSDDocumentCategory = Delivery (J) , Reversal (T)
 - billings document posting status VBRK-RFBSK = C, H (C-“Posting document has been created”; H- “Posted via invoice list”)
- For domestic stock transfer - no billing documents is required for
 - *Goods Receipts with Stock Transfer reference in specific country (domestic)*
 - *Goods Issues with Stock Transfer reference in specific country (domestic)*
- For deliveries as exports
 - A reference to billing documents with link to Material document where
 - ShipFromCountry = ES and ShipToCountry <> ES
 - ReferenceSDDocumentCategory = C, G, H, I, K, L, J, T
 - billings document posting status VBRK-RFBSK = C, H (C - “Posting document has been created”; H- “Posted via invoice list”)
- Cancellations are excluded from reporting therefore no reference documents need to be sent for these.
- Returns are not excluded from reporting, therefore reference to account documents are replicated for:
 - Material documents with PO return - domestic
 - Material documents with PO return - not domestic
 - Material documents with Stock Transfer return - not domestic
- No replication of Supplier Invoices/Billing Documents is required for the variant *Goods Receipt with Production Order reference*.

Additional details for attribute - field mapping for billing and supplier invoice items can be found on [Billing Document Item | SAP Help Portal](#) and [Supplier Invoice Item | SAP Help Portal](#).

Loading Inventory

Open transaction code VPCOE/RDP and select service ‘Inventory’ (alternatively you can run the report /VPCOE/INVENTORY_TO_RDP):

Send Inventory Data to RDP

This is a TRIAL Version and only for DEMO purpose!

RDP Integration Accelerator V.5

Get Only Delta

Options

Selection Id: **RDP_INVEN-20240228**

Preview Data
 Send Data To Cloud
 Export to .XLSX File

Business Activity Metric Data

Company code	<input checked="" type="checkbox"/>	to	<input type="checkbox"/>	
Plant	<input checked="" type="checkbox"/>	to	<input type="checkbox"/>	
Products	<input type="checkbox"/>	to	<input type="checkbox"/>	
Year	<input type="checkbox"/>			
Month	<input type="checkbox"/>			

Additional Parameters

Storage Loc./Batch Stock
 Special Stock
 In Transit

Product Group: to 

Actual stock Inventory data will be extracted per material and plant for a specific key data (e.g. end of month).

Initial load approach for Inventory report:

- all the objects selected based on filters criteria will be sent to RDP
- data will be extracted **for specified document year/month** only (inventory on last day of the month)

Delta load approach for Inventory report:

- all the objects selected based on filters criteria will be sent to RDP
- All objects (Inventory stock) **for the specified month only** will be selected
- Year and Month are predefined with current year and month in delta load

Each month it will display the closing stock based on **material and company code/plant combination**. Every monthly extract contains all combinations of materials and company code/plant, even if the inventory quantity of that specific month is “0”. Negative stocks are not sent to RDP.

Also, please note that all stock type/categories are being considered.

Note: Company code, Year and Month are selection parameters that can be set on initial load and delta load also. All the other parameters are read-only on delta load.

Integration accelerator is using standard report MB5B to extract inventory data. If there are performance issues when selecting a large number of materials with storage location stocks (without batch or special stocks) it is recommended to implement sap note [2459529 - MB5B: Performance optimization during the selection of the storage location stock - SAP for Me](#)

and SAP note [1516684 - Enhancing MSEG with MKPF fields - performance optimization - SAP for Me](#)

Extensibility for RDP ERP Integration reports

The RDP Integration Accelerator provides extensibility through the BAdI **/VPCOE/ADJUST_DATA_RETRIEVAL**, enabling customer-specific adaptations for various integration scenarios.

1. Customer-Specific Adaptations

The BAdI **/VPCOE/ADJUST_DATA_RETRIEVAL** should be implemented to enhance RDP integration scenarios by:

- Adapting the **reading of source data** from other objects.
- Modifying the **mapping of data attributes** to interface attributes.
- Mapping custom values to ensure accurate data replication.

This BAdI is relevant if:

- Different source data are required for entity selection.
- Custom attributes need to be added during replication.

2. Applicable Reports

The following reports use the **/VPCOE/ADJUST_DATA_RETRIEVAL** BAdI:

Report Name	Description
/VPCOE/BATCH_TO_RDP	Send Batch data to RDP.
/VPCOE/CONFIGURATION_TO_RDP	Send Configuration data to RDP.
/VPCOE/CUSTOMER_TO_RDP	Send Customer data to RDP.
/VPCOE/DELIVERY_TO_RDP	Send Delivery data to RDP.
/VPCOE/INCOTERMS_TO_RDP	Send Incoterms data to RDP.
/VPCOE/INVENTORY_TO_RDP	Send Inventory data to RDP.
/VPCOE/MAT_DOC_TO_RDP	Send Material document data to RDP.
/VPCOE/ORG_DATA_TO_RDP	Send Organization data to RDP.
/VPCOE/PRODUCT_TO_RDP	Send Product data to RDP.
/VPCOE/SUPPLIER_TO_RDP	Send Supplier data to RDP.

Note: When any of these reports are executed, the BAdI implementation is triggered to apply customer-specific enhancements.

3. Interface and Methods in BAdI Implementation

The BAdI implements the interface **/VPCOE/IF_ADJ_DATA_RETRIEVAL** which contains the following methods:

Method Name	Description
ADJUST_DATA_RETRIEVAL	Adjust API data retrieval logic.
ADJUST_JSON	Modify the JSON payload based on customer-specific requirements.
ADJUST_MAPPING	Adapt or overwrite standard VPCOE mapping.
ADJUST_TEXT_MAPPING	Adjust mapping for text-based attributes.

GET_EXT_DATA	Retrieve extension data for Product and/or Customer scenarios.
SKIP_SELECTION	Skip standard data selection and apply custom selection logic.
ADJUST_BUILD_WHERE_FOR_VARIANT	Define custom WHERE conditions for selection logic.
DEFINE_MOVEMENT_TYPE	Implement custom movement type logic (needed only for movement types 301, 303, 305 and their reversals).

4. Method Descriptions and Usage

4.1 SKIP_SELECTION

Allows skipping standard data selection logic.

If this method is implemented, the data retrieval logic must be fully customized using ADJUST_DATA_RETRIEVAL.

4.2 ADJUST_DATA_RETRIEVAL

Enables customer-specific data selection and adjustments before transmitting data.

4.3 ADJUST_JSON

Allows modifications to the JSON payload before sending data to RDP.

4.4 ADJUST_MAPPING

Supports custom mapping of attributes from the SAP backend to the RDP JSON structure.

4.5 GET_EXT_DATA

Retrieves additional extension data for Product and Customer replication.

4.6 ADJUST_TEXT_MAPPING

Provides customization for text-based attribute mappings.

4.7 ADJUST_BUILD_WHERE_FOR_VARIANT

Allows customization of WHERE conditions for selection logic, applicable for Material Document replication.

4.8 DEFINE_MOVEMENT_TYPE

- Specifies custom Z movement types corresponding to standard movement types **301, 303, and 305**.

Ensures correct data selection for custom movement types aligned with standard accelerator logic.

5. Handling Custom Movement Types in Material Documents

Background

- The Integration Accelerator does **not use movement types** as selection criteria by default.
- However, for movement types **301, 303, and 305**, additional logic is applied in the standard accelerator to ensure correct data selection.
- If **custom movement types (Z-types)** exist that correspond to these standard movement types, they must be defined explicitly in the BAdl using the method:

```
METHOD /VPCOE/IF_ADJ_DATA_RETRIEVAL~DEFINE_MOVEMENT_TYPE.
CASE iv_code.
    WHEN sc_variants-gr_st.
```

```

        mt_movement_type = VALUE #( ( sign = 'I' option = 'EQ' low = 'Z305' )
                                ( sign = 'I' option = 'EQ' low = 'Z303' )
                                ( sign = 'I' option = 'EQ' low = 'Z301' ) ) .
        mt_stock_change_cat = VALUE #( ( sign = 'I' option = 'EQ' low = 'Z305' ) ) .

WHEN sc_variants-gi_st.
    mt_movement_type = VALUE #( ( sign = 'I' option = 'EQ' low = 'Z303' )
                                ( sign = 'I' option = 'EQ' low = 'Z301' ) ) .
ENDCASE.
ENDMETHOD.
```

Usage

- Use this method to map **custom movement types** to the standard types **301, 303 and/or 305** to ensure correct data retrieval and mapping.
- If no custom movement types are defined, this method does not require implementation.

6. Sample BAdI Implementation

A **sample BAdI implementation** is provided in class:

- **Class Name:** /VPCOE/CL_ADJUST_API_EXAMPLE

BAdI Implementation Guidelines:

- To skip standard data selection, set the parameter CV_SKIP = 'true' in **SKIP_SELECTION**. This ensures that the standard integration accelerator selection logic is bypassed, allowing full customization via /VPCOE/IF_ADJ_DATA_RETRIEVAL~ADJUST_DATA_RETRIEVAL
- If custom mapping of root nodes or subnodes is required, implement **ADJUST_MAPPING**.
- For direct JSON modifications, use **ADJUST_JSON**.
- In Material Document replication BAdI implementations, after defining custom selection logic in **ADJUST_DATA_RETRIEVAL**, it is mandatory to call `adjust_header` to ensure that ship-to and ship-from countries are correctly derived.
 - For further customization of country determination, implement **DEFINE_COUNTRY** accordingly.

7. Accessing BAdI Implementation

- To view or modify the sample implementation, use transaction **SE18** to explore the BAdI definition.
- For details of the parameters used in each method, open transaction **SE24**, enter the interface **/VPCOE/IF_ADJ_DATA_RETRIEVAL**, and execute it.

Enhancement Spot /VPCOE/ADJUST_API_TO_CLOUD Display

The screenshot shows the SAP Fiori interface for managing enhancement spots. The title bar indicates the spot is active. The main area is divided into sections:

- BAdI Definitions:** A tree view showing a single entry: /VPCOE/ADJUST_DATA_RETRIEVAL.
- Description:** Adjust Data Retrieval.
- Interface:** /VPCOE/IF_ADJ_DATA_RETRIEVAL.
- Usability:**
 - Multiple Use
 - Can only be implemented internally at SAP
 - Limited filter use
 - AMDP BAdI
- Instance Creation Mode:**
 - Creating instantiation
 - Reusing Instantiation
 - Context-Specific Instantiation
- Fallback Class:** An empty input field with a pencil icon.
- Implementation Example Classes:**

Example Classes	Description
/VPCOE/CL_ADJUST_API_EXAMPLE	Example BAdI Implementation.

Sample Implementation

A sample BAdI implementation is provided in class /VPCOE/CL_ADJUST_API_EXAMPLE as a reference for custom development.

For more details, execute transaction SE18 to access the sample BAdI implementation.

Execute transaction SE18 to get more details regarding sample BAdI implementation.

BAdI Builder: Initial Screen for Definitions

The screen shows the initial configuration for a BAdI definition. The user has selected "BAdI Name" and entered the value "/VPCOE/ADJUST_DATA_RETRIEVAL". Below the input field are three buttons: "Display", "Change", and "Create".

The screenshot shows the SAP Fiori Launchpad interface for the Enhancement Spot /VPCOE/ADJUST_API_TO_CLOUD. The main title bar says "Enhancement Spot /VPCOE/ADJUST_API_TO_CLOUD Display". Below it, there's a toolbar with various icons. The main content area has tabs: "Attributes", "Enhancem. Implementations", "Technical Details", and "Enh. Spot Element Definitions". The "Enh. Spot Element Definitions" tab is active. On the left, there's a tree view under "BAdI Definitions" with one node expanded: "/VPCOE/ADJUST_DATA_RETRIEVAL - Adjust Data Retrieval". This node has two sub-nodes: "Interface" and "Implementations". The right side of the screen displays the technical details for this BAdI definition. It includes fields for "BAdI Definition" (/VPCOE/ADJUST_DATA_RETRIEVAL), "Description" (Adjust Data Retrieval), "Interface" (/VPCOE/IF_ADJ_DATA_RETRIEVAL), "Usability" (with a checked checkbox for "Multiple Use"), "Instance Creation Mode" (radio buttons for "Creating instantiation" (selected), "Reusing Instantiation", and "Context-Specific Instantiation"), and a checkbox for "Call fallback if no implementation is executed" which is unchecked. There's also a "Fallback Class" field with a button to edit. At the bottom, there's a section for "Implementation Example Classes" with a table showing one entry: "Example Classes" (/VPCOE/CL_ADJUST_API_EXAMPLE) and "Description" (Example BAdI Implementation.).

Class Name: /VPCOE/CL_ADJUST_API_EXAMPLE

Badi Implementation Guidelines

- To **skip standard data selection**, set the parameter **CV_SKIP = 'true'** within **/VPCOE/IF_ADJ_DATA_RETRIEVAL~SKIP_SELECTION**. This ensures that the standard VPCOE selection logic is bypassed, allowing full customization via **/VPCOE/IF_ADJ_DATA_RETRIEVAL~ADJUST_DATA_RETRIEVAL**.
- If **custom mapping** of root nodes or subnodes is required, use **/VPCOE/IF_ADJ_DATA_RETRIEVAL~ADJUST_MAPPING**.
- For direct JSON modifications, implement **/VPCOE/IF_ADJ_DATA_RETRIEVAL~ADJUST_JSON**.
- In Material Document replication BAdI implementations, after defining custom selection logic in **/VPCOE/IF_ADJ_DATA_RETRIEVAL~ADJUST_DATA_RETRIEVAL**, it is **mandatory** to call **adjust_header**. This ensures that **ship-to** and **ship-from** countries are correctly derived for logistics processing.
 - If further customization of country determination is needed, implement **DEFINE_COUNTRY** accordingly.

To get further details of the parameters of each method, open transaction SE24, give the interface details **/VPCOE/IF_ADJ_DATA_RETRIEVAL** and execute it.

Class Builder: Display Interface /VPCOE/IF_ADJ_DATA_RETRIEVAL

Interface /VPCOE/IF_ADJ_DATA_RETRIEVAL Implemented / Active

Properties Interfaces Attributes Methods Events Types Aliases

Parameters Exceptions Filter

Method	Level	Description
ADJUST_DATA_RETRIEVAL	Instance Method	Adjust API data Retrieval
ADJUST_JSON	Instance Method	Adjust JSON data
ADJUST_MAPPING	Instance Method	Adjust Mapping
ADJUST_TEXT_MAPPING	Instance Method	Adjust Texts Mapping
GET_EXT_DATA	Instance Method	Get Extension Data
SKIP_SELECTION	Instance Method	Skip Selection Logic
ADJUST_BUILD_WHERE_FOR_VARIANT	Instance Method	Adjust where conditions for variant
DEFINE_MOVEMENT_TYPE	Instance Method	Definition of movement type

Select the method for which you want to see the parameter details and click on parameters, you will get all parameters details for that method.

Interface /VPCOE/IF_ADJ_DATA_RETRIEVAL Implemented / Active

Properties Interfaces Attributes Methods Events Types Aliases

Parameters of Method ADJUST_DATA_RETRIEVAL Properties

Parameter	Type	P... O... Typing Method	Associated Type	Default Value	Description
IV_SRV_GRP	Importing	<input type="checkbox"/>	/VPCOE/DE_SERVICE_GROUP		Service Group
IV_SRV_ID	Importing	<input type="checkbox"/>	/VPCOE/DE_SERVICE_ID		Service ID
IV_API_TYPE	Importing	<input type="checkbox"/>	/VPCOE/DE_API_TYPE		Api Type
IS_SEL_OPT	Importing	<input checked="" type="checkbox"/>	DATA		
IV_LEVEL	Importing	<input type="checkbox"/>	/VPCOE/LEVEL		Level in the JSON
IV_CODE	Importing	<input type="checkbox"/>	CHAR20		Char 20
IO_LOG	Importing	<input type="checkbox"/>	/VPCOE/CL_RDP_LOG		Log
IV_MODE	Importing	<input type="checkbox"/>	/VPCOE/DE_MODE		Execution Mode
IV_SESSION_ID	Importing	<input type="checkbox"/>	RAW16		RAW16
CT_DATA	Changing	<input type="checkbox"/>	DATA		

Standard settings

For more information about the standard settings (filters, single or multiple uses), see the *Enh. Spot Element Definitions* tab in the *BAdl Builder* (transaction [SE18](#)).

See also

This BAdl uses the interface `/VPCOE/IF_ADJ_DATA_RETRIEVAL`.

For more information, display the interface in the [Class Builder](#) (Transaction [SE24](#)).

Additional BAdl documentation is available for the Badi:

BAdI Definition /VPCOE/ADJUST_DATA_RETRIEVAL

Description Adjust Data Retrieval

Interface /VPCOE/IF_ADJ_DATA_RETRIEVAL

Usability

- Multiple Use
- Can only be implemented SAP-internally
- Limited Filter Use
- AMDP BAdI

Instance Creation Mode

- Newly Creating Instantiation
- Reusing Instantiation
- Context-Specific Instantiation

Call fallback if no implementation is executed

Fallback Class

Implementation Example Classes

Example Classes	Description
/VPCOE/CL_ADJUST_API_EXAMPLE	Example BAdI Imp

Use

The Business Add-In (BAdI) /VPCOE/ADJUST_DATA_RETRIEVAL that is assigned to Enhancement Spot /VPCOE/ADJUST_API_TO_CLOUD is used to adjust the data during the upload of data from source to the API of SAP Responsible Design and Production (RDP). Its main task is to provide an extensibility mechanism to integrate customer specific implementations to adapt the reading of source data from different source, mapping of data attributes to interface attribute, and mapping of values to data values which needs to be replicated.

This BAdI can be relevant if you prefer different source data for entities data selection or if you want to add custom attributes. In following reports this BAdI is used:

- /vpcoe/batch_to_rdp : Send Batch data to the RDP cloud
- /vpcoe/configuration_to_rdp : Send Configuration data to the RDP cloud
- /vpcoe/customer_to_rdp : Send Customer data to the RDP cloud
- /vpcoe/delivery_to_rdp : Send Delivery data to the RDP cloud
- /vpcoe/incoterms_to_rdp : Send Incoterms data to the RDP cloud
- /vpcoe/inventory_to_rdp : Send Inventory data to the RDP cloud
- /vpcoe/mat_doc_to_rdp : Send Material data to the RDP cloud
- /vpcoe/org_data_to_rdp : Send Organization data to the RDP cloud
- /vpcoe/product_to_rdp : Send Product data to the RDP cloud
- /vpcoe/supplier_to_rdp : Send Supplier data to the RDP cloud

When one of these reports is executed, the mentioned BAdI is called. As a result of the call, an instance of a customer specific implementation to fetch the data, to adjust the attribute mapping, and to adjust the value mapping is executed.

Requirement

For more information about the standard settings for this BAdI, such as filters, single or multiple uses, see the Spot Element Definitions tab in the BAdI Builder (transaction SE18).

BAdI Methods

The BAdI definition is active in the Integration accelerator package. It contains the following methods from interface /VPCOE/IF_ADJ_DATA_RETRIEVAL:

- SKIP_SELECTION

This method allows to skip VPCOE data selection, in that case the data selection should be done by customer logic in ADJUST_DATA_RETRIEVAL method.

Product and Customer extensions

Class /VPCOE/CL_ADJUST_API_EXAMPLE is sample implementation for your reference to implement the actual BAdI /VPCOE/ADJUST_DATA_RETRIEVAL for Product/Customer extension reports as per your requirement.

The method to be implemented for extension data is
/VPCOE/IF_ADJ_DATA_RETRIEVAL~GET_EXT_DATA

Method	Level	Visibility	M...	Description
/VPCOE/IF_ADJ_DATA_RETRIEVAL~ADJUST_DATA_RETRIEVAL	Instance Method	Public		Adjust API data Retrieval
/VPCOE/IF_ADJ_DATA_RETRIEVAL~ADJUST_JSON	Instance Method	Public		Adjust JSON data
/VPCOE/IF_ADJ_DATA_RETRIEVAL~ADJUST_MAPPING	Instance Method	Public		Adjust Mapping
/VPCOE/IF_ADJ_DATA_RETRIEVAL~ADJUST_TEXT_MAPPING	Instance Method	Public		Adjust Texts Mapping
/VPCOE/IF_ADJ_DATA_RETRIEVAL~GET_EXT_DATA	Instance Method	Public		Get Extension Data
/VPCOE/IF_ADJ_DATA_RETRIEVAL~SKIP_SELECTION	Instance Method	Public		Skip Selection Logic

For more information on datatypes for extension attributes please have a look at 'RDP Fields Mapping v6.xls' file.

Also, additional details on all available attributes and its values for extension data are available here:

[Product Extension | SAP Help Portal](#)

Product Extension:

Column	API Element	SAP ECC/ S/4HANA Attribute	Description																										
Product Number	id	MATNR	ID of the product																										
Reference Quantity	referenceQuantity	DEC10	<p>Reference quantity for fee in base unit of measure.</p> <p>The reference quantity is used during fee calculation to provide enough decimals for an accurate calculation. The default value is 10,000 and the attribute refers to unit of measure of the product.</p>																										
Product Type harmonized	productTypeHarmonized	CHAR10	<p>Possible values:</p> <table border="1"> <thead> <tr> <th>Value</th><th>Description</th></tr> </thead> <tbody> <tr> <td>FIN_GOOD</td><td>Finished good</td></tr> <tr> <td>RAWMATPACK</td><td>Raw material for packaging</td></tr> <tr> <td>PACKMAT</td><td>Packaging material</td></tr> <tr> <td>NOTAPPL</td><td>Not relevant</td></tr> <tr> <td>SEMIPACKM</td><td>Semifinished Packaging Material</td></tr> </tbody> </table>	Value	Description	FIN_GOOD	Finished good	RAWMATPACK	Raw material for packaging	PACKMAT	Packaging material	NOTAPPL	Not relevant	SEMIPACKM	Semifinished Packaging Material														
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Brand ID	brand	CHAR30	Brands consist of a name and an ID, they can be assigned to a product. You can create brands in the Configuration Cockpit application and assign brands to products in the Manage Products application.																												
Hazardous Product CLPEU	isHazardousClpEu	CHAR5	<p>Indicates if the product is classified as hazardous according to the CLP regulation.</p> <p>The CLP (Classification, Labeling, and Packaging) regulation is a European Union regulation that aligns the European Union legislation with the GHS (Globally Harmonized System of Classification and Labeling of Chemicals), which is managed by the United Nations.</p>																												
Product comes without packaging	hasNoPackaging	CHAR5	The product comes without packaging. This can apply to bulk products in a container without further packaging or the product is filled into returnable packaging brought by the end consumer, for example, a milk dispenser. These products do not need a packaging composition and can be ignored by most EPR																												

			reports. Packaging for products in this category is not distributed, collected, cleaned, or reused by the producer or retailer. Instead, they are fully under the control of the end-consumer and therefore would not require a packaging composition on the seller side. This model of packaging aims to avoid single-use packaging entirely.														
Product Countries	productCountries		<table border="1"> <thead> <tr> <th>API Element</th><th>ECC/S4H attribute</th></tr> </thead> <tbody> <tr> <td>country</td><td>LAND1</td></tr> <tr> <td>validFrom</td><td>DATS</td></tr> <tr> <td>tag</td><td>CHAR10</td></tr> <tr> <td>isNotEprRelevant</td><td>CHAR5</td></tr> <tr> <td>eprProductFamily</td><td>CHAR10</td></tr> <tr> <td>inhouseProductionPercent</td><td>DEC3</td></tr> </tbody> </table>	API Element	ECC/S4H attribute	country	LAND1	validFrom	DATS	tag	CHAR10	isNotEprRelevant	CHAR5	eprProductFamily	CHAR10	inhouseProductionPercent	DEC3
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country	LAND1																
validFrom	DATS																
tag	CHAR10																
isNotEprRelevant	CHAR5																
eprProductFamily	CHAR10																
inhouseProductionPercent	DEC3																

Example of payload for Product extension:

```
{
  "source": "ECC",
  "elements": [
    {
      "id": "AFR-11-ART-001_____00011",
      "productTypeHarmonized": "PACKMAT",
      "productContent": "BEV_WATER",
      "isHazardousClpEu": true,
      "isDgProductEu": true,
      "hasNoPackaging": true,
      "brand": "1001",
      "referenceQuantity": "10000",
      "productCountries": [
        {
          "country": "DE",
          "validFrom": "2021-04-25",
          "tag": "IYSIUY765H",
          "isNotEprRelevant": true,
          "eprProductFamily": "id3",
          "inhouseProductionPercent": 13
        }
      ]
    }
  ]
}
```

Customer Extension:

Column	API Element	SAP ECC/S/4HANA Attribute	Description												
Customer Number	id	KUNNR	ID of the customer												
Tag	tag	Customer specific	Tag that can be assigned to customers. Customer tags can be created in the Configuration Cockpit application. Tags can be assigned to customers in the Manage Customers application.												
Role	role	Customer specific	A role that can be assigned to a customer. Possible values: <table border="1"> <thead> <tr> <th>Value</th><th>Description</th></tr> </thead> <tbody> <tr> <td>END_CONSUM</td><td>End-consumer</td></tr> <tr> <td>RETAILER</td><td>Retailer</td></tr> <tr> <td>PROF_CUSTM</td><td>Professional customer</td></tr> <tr> <td>NEXT_PACKP</td><td>Next level packaging producer</td></tr> <tr> <td>HOSPITAL</td><td>Hospital</td></tr> </tbody> </table>	Value	Description	END_CONSUM	End-consumer	RETAILER	Retailer	PROF_CUSTM	Professional customer	NEXT_PACKP	Next level packaging producer	HOSPITAL	Hospital
Value	Description														
END_CONSUM	End-consumer														
RETAILER	Retailer														
PROF_CUSTM	Professional customer														
NEXT_PACKP	Next level packaging producer														
HOSPITAL	Hospital														

Example of payload for Customer extension:

```
{
  "source": "ECC",
  "elements": [
    {
      "id": "1000000001",
      "tag": "TAG",
      "role": "RETAILER"
    }
  ]
}
```

Please note, in case you don't have any value for some of the extension attributes, you need to implement the logic in BAdI method '/VPCOE/IF_ADJ_DATA_RETRIEVAL~ADJUST_JSON' to replace empty values with NULL. Below is small example of the code you may introduce for this matter (a similar example it's also on the sample BAdI implementation we are providing):

In BAdI method '/VPCOE/IF_ADJ_DATA_RETRIEVAL~ADJUST_JSON', introduce code below:

```
IF      iv_api_type = /vpcoe/cl_customizing_helper=>sc_api_type-rdp
AND    iv_srv_grp  = /vpcoe/cl_customizing_helper=>sc_grp_id-product
AND    iv_srv_id   = /vpcoe/cl_customizing_helper=>sc_service_id-PRODUCT_EXT.

LOOP AT ct_json ASSIGNING <ls_json>.
  REPLACE ALL OCCURRENCES OF ':""' IN <ls_json>-elements WITH ': null'.
ENDLOOP.
ENDIF.
```

For customer extension *role* attribute, the sample badi impelmentation contains the logic based on RDP recomendation on class and characteristics:

Class	ZCCL_RDP_CUST_EXT
Description	RDP specific Customer Attributes
Class Type	011

Characteristics	Description	Data Type	Length	Decimal	UoM / Values
ZRDP_CUST_EXT_ROLE	Customer Role	CHAR	10	0	Code List
ZRDP_PROD_EXT_TAG	Customer Tag	CHAR	10	0	Customer defined code list

Email notification adaptation

Whenever replication is failing for an entity, if customer maintained [email addresses configuration settings](#), an email will be sent to all maintained email addresses.

BAdI `/VPCOE/NOTIFICATION_PROCESSING` is available for adapting the email sender / email body content or for overwriting error notification processing.

For more details and example implementation you can have a look at sample BAdI implementation `/VPCOE/CL_NOTIFICATION_EXAMPLE`.

Excel documents processing adaptation

BAdI `/VPCOE/XLS_PROCESSING` is available for excel documents processing adjustments.

/VPCOE/XLS_PROCESSING – technical documentation

The Business Add-In (BAdI) `/VPCOE/XLS_PROCESSING` that is assigned to Enhancement Spot `/VPCOE/ADJUST_API_TO_CLOUD`, this allows to override the logic for saving the Excel file. With this BADI, you can add your own logic for saving files both in the background and in real time, or completely change it. It also provides the option to change the save path of the file, if necessary.

This BAdI is used in the "`/VPCOE/CL_XLS_HANDLER`" class in the "`SAVE_XLS_FILE`" method.

Excel file download is available in the following reports:

- `/vpcoe/batch_to_rdp` Send Batch data to the RDP cloud
- `/vpcoe/configuration_to_rdp` Send Configuration data to the RDP cloud
- `/vpcoe/customer_to_rdp` Send Customer data to the RDP cloud
- `/vpcoe/delivery_to_rdp` Send Delivery data to the RDP cloud
- `/vpcoe/incoterms_to_rdp` Send Incoterms data to the RDP cloud
- `/vpcoe/inventory_to_rdp` Send Inventory data to the RDP cloud
- `/vpcoe/mat_doc_to_rdp` Send Material data to the RDP cloud
- `/vpcoe/org_data_to_rdp` Send Organization data to the RDP cloud
- `/vpcoe/product_to_rdp` Send Product data to the RDP cloud
- `/vpcoe/supplier_to_rdp` Send Supplier data to the RDP cloud

For more information about the standard settings for this BAdI see the Spot Element Definitions tab in the BAdI Builder (transaction SE18).

BAdI Methods

The BAdI definition is active in the Integration accelerator package. It contains the following method from interface `/VPCOE/IF_XLS_PROCESSING`:

· ADJUST_FILE_SAVING

As described above, this method allows to rewrite the logic for saving the Excel file or change the path that was specified on the selection screen.

The method uses the following parameters:

- IV_BACKGROUND : An import parameter that is used to determine in which mode the file will be saved
- IO_LOG : An import parameter for writing messages to the LOG
- EV_SKIP_STANDARD_PROCESS : The export parameter. If the value of the parameter is "true", then we skip the standard implementation of the "SAVE_XLS_FILE" method.
- CV_FILE_PATH : Changing parameter. This parameter is passed the path where the file is saved, as specified in the selection screen. Since the type of this parameter is "Change", you can change it.
- CT_XLS_DATA : Change parameter. This is a table that stores all the information of an Excel file in the Binary type

BAdI Implementations

The BAdI implementation must be defined by the user and is not provided by SAP.

Sample implementation

As example see class /VPCOE/CL_XLS_PROCESSING_EXMPL.

Resending failed payloads

If during data replication there are failed payloads from various reasons, all these are recorded, and you will have the possibility to resend them later. Please note if there are missing data into your records you cannot just resend the payloads, you will have to correct the data and use specific data reports to reselect and send the data again.

You can run the report /VPCOE/REPROCESS_PAYLOAD using SE38 transaction code:

The screenshot shows the 'ReProcess Failed Payloads' report. At the top, there is a message: '* This is a TRIAL Version and only for DEMO purpose! *'. Below this is a 'Payload' section containing a table with columns for API Type, Service Group, Service Id, Session Id, Session Item, and Created Date. Each row has a 'to' column and a 'repeat' button. Below the table is a 'Processing Mode' section with radio buttons for 'Automatic' and 'Manual'.

You can choose from two options for resending the failed payloads: manual or automatic mode.

By choosing automatic mode, all failed payloads for specific filter criteria used are resent automatically. This option can be chosen when executing the report in scheduled jobs.

In manual mode, you have to manually select specific request(s) from the list and click on 'Repeat request' button to resend a request.

If the requests are sent successfully, they will be deleted from the list.

ReProcess Failed Payloads

Also, in case there is a failed payload that needs to be analyzed further, there is the option to display and copy/save the failed payload for further processing (e.g using Postman tool).

Trace Maintenance Report

A new trace functionality has been introduced to help users monitor the status of replicated objects more effectively.

Important: Tracing is only active if the following application parameter is maintained:

- `ENABLE_TRACE = X`

This setting can be adjusted in the **Application Parameters** section of the RDP configuration. If the parameter is not set, no trace data will be recorded.

Purpose

The report **/VPCOE/TRACE_MAINTENANCE** enables logging and review of all objects that have been selected for replication—whether successfully sent or not sent due to various reasons (e.g. missing data, configuration issues).

For each payload created to be sent to RDP, the report saves trace details to allows tracking of both:

- Successfully replicated objects
 - Objects selected but not sent

Trace Data Captured

The following fields are recorded for each relevant object:

- **Trace ID** – Unique identifier for the trace session.
- **API Type** – Type of outbound API used (e.g., CUSTOMER, MATERIAL, DELIVERY).
- **Date/Time** – Timestamp of when the replication run occurred.
- **User** – User ID that triggered the replication.
- **Object ID** – Business object identifier (e.g., Customer Number, Material Number).

User Functionality

The report provides two key functions:

1. Display Mode

Users can search and display trace data using the following selection criteria:

- Trace ID
- API Type
- Date/Time Range
- Object ID

This helps with analyzing what was sent, skipped, and why.

2. Cleanup Mode

A deletion feature allows users to **clean up the trace data** based on:

- Date range
- Specific API types
- Or complete flush of the table if needed

! Note: The trace table is intended for short-term diagnostic use. Regular cleanup is recommended to prevent data volume issues.

API Type	RDP			
Service Group		to		
Service ID		to		
Object ID		to		
Last Sended Date		to		
Last Sended Time	00:00:00	to	00:00:00	
Status	Success			
<input type="checkbox"/> Clear Log				

RDP Packaging Data Integration reports

Packaging data, such as packaging compositions, packaging elements, and basic fractions that are uploaded and evaluated in SAP Responsible Design and Production can be stored in SAP ECC or SAP S/4HANA in different locations, for example, in SAP Product Lifecycle Management (PLM), SAP Recipe Management (RM) or Bill of Material (BOM). Therefore, this integration feature offers

only basic functionality to extract the packaging data out of these storage locations. Customer specific program extensions and a BAdl implementation, where these program extensions are referenced, are required. If no customer specific program extensions are implemented, the upload reports will not upload any packaging data to SAP Responsible Design and Production.

Reports included:

- Report for Uploading Packaging Elements from PLM:
/VPCOE/R_UPH_PCKG_DATA_LOAD
- Report for uploading Packaging Compositions from PLM:
/VPCOE/R_UPH_PCKG_CMP_PLM_LOAD
- Report for Uploading Packaging Compositions from Recipe Management:
/VPCOE/R_UPH_PCKG_CMP_RCP_LOAD
- Report for Uploading Packaging Composition from BoM
/VPCOE/R_UPH_PCKG_CMP_BOM_LOAD
- Report for Uploading Packaging elements from Material Classification
/VPCOE/R_UPH_PCKG_MCL_LOAD

- The BAdl provided for Upload Entity processor implementation:
/VPCOE/BADI_UPH_CUSTOM (use enh. spot /VPCOE/ES_UPH_CUSTOM)

To upload or push data out of the ECC/S4HANA to the SAP RDP solution, the following software parts are necessary:

1. Report(s) to start the upload of data (specification database data or other) to RDP endpoint
2. Implementation of Upload Entity
 - Gathering of current relevant data (full or delta data) of the Upload Entity (if necessary, provide and use BAdIs for customer extensibility)
 - Packaging the relevant data
 - Map the gathered data to internal data structures
 - Transmit the data stored in internal data structures to the corresponding RDP-Push API
 - For Initial/delta upload, store the information about uploaded data

An **Upload Entity** represents an RDP business object (like Packaging Element) with all its defined child nodes (like Packaging Fractions, Product assignments). The structure of an Upload Entity must fit to the provided RDP OData Entity structure for writing data.

Here you can find more details on extensibility and how to implement entity processor class.

Creating recommended classes and characteristics

To facilitate effective packaging data management within SAP RDP, a specialized report has been included to generate recommended classes and characteristics. The report is creating the classes and characteristics for:

- Packaging Elements in Material Classification
- Packaging Compositions in BOM, classifying Pckg. Elmnts. into Main/Subordinate
- Packaging Compositions and Main/Subordinate Packaging Elements in PLM SpecDB
- Packaging fee data classification
 - Class: ZRDP_ES_PLASTICTAX
 - Characteristics:
 - ZRDP_ES_PLASTIC
 - ZRDP_ES_NONRECYCLED_PLASTIC
 - ZRDP_ES_EXEMPTION

- ZRDP_ES_DECREFNO
- ZRDP_ES_CERTREFNO
- ZRDP_ES_PRODORDER_CHECK
- ZRDP_ES_PACKMAT_TAX
- Customer extension data
 - Class: ZRDP_RDP_CUST_EXT
 - Characteristics:
 - ZRDP_CUST_EXT_ROLE
 - ZRDP_PROD_EXT_TAG

The report name is /VPCOE/RDP_CLAS_DATA_CREATOR.

The transaction code /VPCOE/DATA_CREATOR belongs to this report execution.

There are two parameter sections: Set Prefix, and Set Operation Scope.

In the Set Prefix section, set prefixes for classifications and characteristics. Prefixes must not be empty and can't be longer than four characters.

In the Set Operation Scope section, choose between Material Classification and Specification Workbench. The prefixes will be reset automatically to default values that match the default implementation of class /VPCOE/CL_PCKELEM_MCL_EXMPL.

After the execution the program will show the results of created and not created classifications and characteristics.

To modify classifications and characteristics that the program creates, you need to create own Z-objects and copy the code of the report and class /VPCOE/CL_CL_CHAR_DATA_CREATE, which the report calls upon execution.

In your own Z-class you have the following options:

- Changing the classifications and characteristics for packaging element **fractions**: Go to the setup_pckelem_frac_dataset() method and modify lt_pckfrac_classi_params and lt_pckfrac_charac_params.
- Changing the classifications and characteristics for packaging element **attributes**: Go to the setup_pckelem_attr_dataset() method and modify lt_pckattr_classi_params and lt_pckattr_charac_params.

Please note that your modifications must match modifications in example class /VPCOE/CL_PCKELEM_MCL_EXMPL.

Upload Packaging Elements data from PLM

The upload of packaging element data from PLM (Product Lifecycle Management) requires that the according data exists in the Environment, Health, and Safety specification database. In addition, an Upload Entity Processor implementation for the respective Upload Entity PE_PLM exists in the system and is returned by the BAdI implementation of /VPCOE/BADI_UPH_CUSTOM.

The Upload Entity: Packaging data (PLM) retrieves the packaging related data out of the Specification Management.

The report name is /VPCOE/R_UPH_PCKG_DATA_LOAD.

The transaction code /VPCOE/UPH_PE_PLM belongs to this report execution.

The target internal data structures for the retrieved data are implementations of interface /VPCOE/IF_UPH_ENTITY_DATA.

Processor classes are implementations of interface /VPCOE/IF_UPH_ENTITY_PROC and in addition for the PLM case of interface /VPCOE/IF_UPH_ENTITY_PLM_PROC. The base class /VPCOE/CL_UPH_PROC_BASE_PLM provides a basic implementation of these processor interfaces and must be extended for specific adoptions.

Class overview

Interface/Class	Description
/VPCOE/IF_UPH_ENTITY_PROC	<i>Interface for Upload Entity Processors</i>
/VPCOE/IF_UPH_ENTITY_PLM_PROC	<i>Interface for Entity Processors based on PLM data</i>
/VPCOE/CL_UPH_PROC_BASE	<i>Abstract base processor implementation.</i> <i>Concrete data extraction implementations must inherit from this base class.</i>
/VPCOE/CL_UPH_PROC_BASE_PLM	<i>Base processor implementation for Upload Entity Packaging PLM.</i> <i>Concrete PLM data extraction implementations must inherit from this base class.</i>
/VPCOE/CL_UPH_WRAP_SPEC	<i>Wrapper Class for a Specification</i>
/VPCOE/CL_UPH_WRAP_VA	<i>Wrapper Class for Value Assignment data (with Characteristics) of a Specification</i>
/VPCOE/IF_UPH_ENTITY_DATA	<i>Interface for Upload Entity data</i>
/VPCOE/CL_UPH_ENT_PCKG_ELEMENT	<i>Entity data for Packaging Element</i>
/VPCOE/CL_UPH_ENT_PCKG_FRCTN	<i>Entity data for Basic Material Fraction</i>
/VPCOE/CL_UPH_ENT_PCKG_PRODUCT	<i>Entity data for Packaging Element to Product</i>
/VPCOE/IF_UPH_ENTITY_HU_PROC	<i>Interface for Upload Handling Units</i>
/VPCOE/CL_UPH_ENT_HANDL_UNIT	<i>Entity data for Packaging Composition Items (Handling Units)</i>

Extensibility

Implementing the Upload Entity Processor

An Upload Entity Processor implementation for the Upload Entity PE_PLM should inherit from base class /VPCOE/CL_UPH_PROC_BASE_PLM. This base class is already implementing the methods of the interface /VPCOE/IF_UPH_ENTITY_PROC and only the mapping of the specification data must be provided by implementing the method /VPCOE/IF_UPH_ENTITY_PLM_PROC~map_spec_data.

See the **Technical Documentation** of BAdI /VPCOE/BADI_UPH_CUSTOM for an example implementation of such an Upload Entity Processor.

The implementation of custom entity processor can be realized by the following steps:

1. Create a processor implementation by implementing the interface /VPCOE/IF_UPH_ENTITY_PROC. If the processor is used to read out of the specification management, derive the implementation from the basis class /VPCOE/CL_UPH_PROC_BASE_PLM.
 - implement method /VPCOE/IF_UPH_ENTITY_PROC~prepare_process to determine which **specifications are relevant**. Based on data input on the selection screen, the relevant specifications for the data upload are determined. When running in delta processing mode, here the relevant specifications must be filtered to only the changed one (since the last processing).

- implement all **relevant Value Assignment Types** which contain Packaging Element or Fraction data in method
`/VPCOE/IF_UPH_ENTITY_PLM_PROC~get_relevant_vat`
 - All **mappings** between specification data and the target Entity Data (Packaging Element, Packaging Fraction, ...) must be implemented in the method
`/VPCOE/IF_UPH_ENTITY_PLM_PROC~map_spec_data`
2. Exchange the default BADI implementation for `/VPCOE/BADI_UPH_CUSTOM` and deliver the new implementation.

Last change information

There is no CDS views (internal API) that used in the S/4 HANA implementation to get some of the required data. That's why separate class has been implemented for ECC solution -
`/VPCOE/CL_PLM_DB_ACCESS`.

Upload Packaging Compositions from PLM

The upload of packaging composition data from PLM requires that the accompanying data exists in the Environment, Health, and Safety specification database. In addition, an Upload Entity Processor implementation for the respective Upload Entity PC_PLM exists in the system and is returned by the BAdI implementation of VPCOE/BADI_UPH_CUSTOM. The Report name is
`/VPCOE/R_UPH_PCKG_CMP_PLM_LOAD`.

The transaction code `/VPCOE/UPH_PC_PLM` belongs to this report execution.

Implementing the Upload Entity Processor

An Upload Entity Processor implementation for the Upload Entity PC_PLM should inherit from base class `/VPCOE/CL_UPH_PROC_BASE_PLM`. This base class is already implementing the methods of the interface `/VPCOE/IF_UPH_ENTITY_PROC` and only the mapping of the specification data must be provided by implementing the method `/VPCOE/IF_UPH_ENTITY_PLM_PROC~MAP_SPEC_DATA` from interface `VPCOE/IF_UPH_ENTITY_PLM_PROC`.

See the **Technical Documentation** of BAdI VPCOE/BADI_UPH_CUSTOM for an example implementation of such an entity processor.

Class overview

The objects created for packaging elements could be reused for the extraction of packaging compositions. The list below supports the statement:

Report	<code>/VPCOE/R_UPH_PCKG_CMP_PLM_LOAD</code>	Extract Packaging Composition from Spec DB
Factory Class	SAME - Add new transfer mapper for the composition	
BADI	No Change Needed - Call right upload entity from the entity processor	
BASE	No Change Needed	
BASE PLM	No Change Needed	
WRAP_SPEC	No Change Needed	
WRAP_VA	No Change Needed	

Example Class Implementation	/VPCOE/ZCL_UPH_CUSTOM_IMPL	Call the right example implementation;
	/VPCOE/CL_UPH_PROC_PLM_EXMPL1	Custom/Example Implementation for Extraction of Packaging Composition from Spec DB
Logger class	No change	

Access the Specifications data

There is no CDS views (internal API) that used in the S/4 HANA implementation to get some of the required data. So, separate class is implemented for ECC solution - /VPCOE/CL_PLM_DB_ACCESS.

To get Specification data the following methods are used:

- GET_SPECIFICATIONFORKEYDATE
- GET_SPECASSIGNEDMATLFORKEYDATE

Upload Packaging Compositions from Recipe Management

Retrieves the packaging composition related data out of the Recipe Development.

The Report is /VPCOE/R_UPH_PCKG_CMP_RCP_LOAD.

The transaction code /VPCOE/UPH_PC_RCP belongs to this report execution.

Class overview

The objects created for packaging elements and packaging components from Spec DB could be reused for the extraction of packaging compositions from Recipe development. The list below supports the statement:

Report	/VPCOE/R_UPH_PCKG_CMP_RCP_LOAD	Extract Packaging Composition from Recipe Development; Report screen fields are mentioned in the table below
Factory Class	No Change Needed	
BADI	No Change Needed	
BASE	No Change Needed	
BASE PLM	/VPCOE/CL_UPH_PROC_BASE_RCP	Base Class to retrieve packaging composition data from Recipe development
WRAP_SPEC	/VPCOE/CL_UPH_WRAP_CMP_RCP	Wrapper class to retrieve packaging composition data from recipe
WRAP_VA		
Example class Implementation	/VPCOE/ZCL_UPH_CUSTOM_IMPL	Call right example implementation

	/VPCOE/CL_UPH_CMP_RCP_EXAMPLE	Custom/Example Implementation for Extraction of Packaging Composition from Recipe development
Class for Comp_header	/VPCOE/CL_UPH_ENT_PCKG_CMP_HDR	All of these Packaging Composition elements from Spec DB would be reused
Class for Comp_Item	/VPCOE/CL_UPH_ENT_PCKG_CMP_ITM	
Transfer Mapper class	/VPCOE/CL_UPH_ENT_PCKG_CMP_ITM	
Logger class	No change needed	Adapt for messages specific to recipe development

Access the Recipe Management data

There is no CDS views (internal API) that used in the S/4 HANA implementation to get some of the required data. So, separate class is implemented for ECC solution - /VPCOE/CL_PLM_DB_ACCESS.

To get Specification data the following methods are used:

- GET_RECIPESTATUSTEXT
- GET_SINGLE_RECIPETYPE
- GET_RECIEFORKEYDATE
- GET_RECIEFORMULAITEM

Uploading Packaging Compositions from Bills of Material

The upload of packaging composition data from Bills of Material (BOMs) requires that the according data exist in the bill of material. In addition, an Upload Entity Processor implementation for the respective Upload Entity PC_BOM exists in the system and is returned by the BAdI implementation of /VPCOE/BADI_UPH_CUSTOM.

The Report is /VPCOE/R_UPH_PCKG_CMP_BOM_LOAD.

The transaction code /VPCOE/UPH_PC_BOM belongs to this report execution.

Implement the Upload Entity Processor

An Upload Entity Processor implementation for the Upload Entity PC_BOM should inherit from base class /VPCOE/CL_UPH_PROC_BASE_BOM. This base class is already implementing the methods of the interface /VPCOE/IF_UPH_ENTITY_PROC and only the mapping of the BOM must be provided by implementing the method /VPCOE/IF_UPH_ENTITY_BOM_PROC~MAP_BOM_DATA.

See the **Technical Documentation** of BAdI /VPCOE/BADI_UPH_CUSTOM for an example implementation of such an entity processor.

Report parameters:

- **Initial Load / Delta Load** (Radio Buttons):

If the Initial Load radio button is selected, then the report selects the BOMs based on the selection screen parameters.

If the Delta Load radio-button is selected, then the selection screen parameters of the previous successful initial load are used and therefore all selection screen parameters except the Test Mode are hidden. In addition to that, during delta load, only those BOMs that have been updated since the last successful initial or delta load will be extracted and transferred.

- **Test Mode (Check Box):**

If the Test Mode check box is selected, then the entire processing in terms of extraction and mapping of BOM data remains same only the transferring of the data to the SAP Responsible Design and Production API is skipped. Test Mode is supported in initial load or delta load.

- **Source ID (Input Parameter):**

Source ID is a mandatory input parameter which is transferred to SAP Responsible Design and Production. It identifies from which source system the data is coming.

- **RFC Destination (Input Parameter):**

This parameter is mandatory and contains the customer implemented target destination for the SAP Responsible Design and Production API (defined in transaction sm59). The default value VPCOE_RDP_PLM can be changed here.

- **Use Filter Criteria:**

The following input parameters are enabled for data filtering.

- Material (include ranges, patterns, multi selection): Filter for BOMs that are assigned to this material
- Material type (include ranges, patterns, multi selection): Filter for BOMs that are assigned to materials of this material type
- Plant (include ranges, patterns, multi selection): Filter for BOMs that are assigned to this plant
- BOM Usage (include ranges, patterns, multi selection): Filter for BOMs that are defined for this usage area
- Alternative BOM (include ranges, patterns, multi selection): Filter for BOMs with this alternative number
- BOM Status (single selection): Filter for BOMs with this status
- BOM Valid Before Date (Valid From): This field is used to filter the BOM validity. All BOMs that are valid before or on this date will be selected for processing. By default,

this field is hidden and has the value '31.12.9999' which means that every version will be selected for processing.

Use the DISPLAY_VALIDITY function code to see this field. You can change the value but consider that changing the BOM Valid Before Date can lead to missing links between packaging elements and packaging compositions when not all versions are uploaded.

- Change Date of BOM (include ranges, multi selection): Filter for BOMs with this (overall) change date

Additional Settings: The following additional settings configure the search.

- Explosion Level (Input parameter): A mandatory parameter that defines the maximum number of levels that are used to explode the BOM. This is relevant for nested BOMs only.

BOM Valid From Date:

Following scenarios shall be supported:

1. Valid From date is provided: All BOM that are valid for this key date shall be replicated. Apply this logic for both, initial load and delta load.
2. Valid From date is visible and is left empty: Empty from-date means that from-date = current date. All BOM that are valid for this rolling key date shall be replicated. Apply this logic for both, initial load and delta load.
3. Valid From date is hidden: the default value for this field is '31.12.9999' which means that every version will be selected for processing.

Change Date of entire BOM

Following scenarios are supported:

1. Provide only from-date, only BOM header and components changed on that specific date are extracted (whole BOM is extracted)
2. Provide from-date and to-date, all BOM header and components changed between (\geq from-date and \leq end-date) are extracted

Default Values for Selection Parameters:

- The BOM Valid From Date is always defaulted to "31.12.9999"
- Radio button for Initial load is defaulted.

Mandatory Selection Parameters for Filtering Packaging Compositions

If extracting by Filter Criteria:

- The field "Maximum explosion level" shall be mandatory with default value 10.

The upload of packaging composition data from Bills of Material (BOMs) requires that the according data exist in the bill of material. In addition, an Upload Entity Processor implementation for the respective Upload Entity PC_BOM exists in the system and is returned by the BAdI implementation of /VPCOE/BADI_UPH_CUSTOM.

Use report /VPCOE/R_UPH_PCKG_CMP_BOM_LOAD to extract packaging composition data from BOMs and to push it to the SAP Responsible Design and Production.

An Upload Entity Processor implementation for the Upload Entity PC_BOM should inherit from base class /VPCOE/CL_SURDP_UPH_PROC_BASE_BOM. This base class is already implementing the methods of the interface /VPCOE/IF_UPH_ENTITY_PROC and only the mapping of the BOM must be provided by implementing the method /VPCOE/IF_UPH_ENTITY_BOM_PROC~MAP_BOM_DATA.

Class Overview

Report	/VPCOE/R_UPH_PCKG_CMP_BOM_LOAD	Extract Packaging Composition from BoM
Factory Class	SAME – Add new transfer mapper for the composition	
BADI	No Change Needed – Call right upload entity from the entity processor	
WRAP_SPEC	No Change Needed	
WRAP_VA	No Change Needed	
Implementing Class	/VPCOE/ZCL_UPH_CUSTOM_IMPL	Call the right example implementation;
Example Implementation	/VPCOE/CL_UPH_CMP_BOM_EXAMPLE	Custom/Example Implementation for Extraction of Packaging Composition from BoM
Logger class	No change	

Sample BAdI Implementations for V1 and V2 RDP Packaging data APIs

Sample BAdI implementations are provided for both **V1** and **V2** of the Packaging Data API. These implementations offer a comprehensive framework for processing and transferring BOM (Bill of Materials) data as part of the RDP Integration Accelerator.

Key Features Included in the Sample BAdI Implementation

1. **BOM Extraction Based on Filters**
 - Extracts BOMs based on the filter criteria defined in the report.
2. **Material Type Filtering**
 - Filters BOM positions by materials of **material type VERP** (packaging materials).
3. **Classification and Assembly BOM Checks**
 - For each BOM position:
 - Checks if a **material classification** for packaging data exists.
 - Validates the **valid-from date** of the BOM position.
 - Checks if the BOM position is an **assembly BOM** with an existing batch classification as the main element.
4. **Transfer as Packaging Composition Item**
 - If a **packaging data classification** exists, the BOM position is transferred as a **packaging composition item**.
5. **Combination of VERP Positions in Assembly BOMs**
 - Searches through all assembly BOMs for positions of **type VERP**.
 - Combines the **VERP positions** into a single **packaging composition** for the top-level BOM header (Product).

6. Handling Assembly BOMs with Batch Classification

- In case of an assembly BOM with an **existing batch classification** as the main element:
 - Positions within the assembly are considered as **subordinate elements**.
 - The presence of **packaging data material classification** and **batch classification** for subordinate elements is required.

7. Exclusion of BOM Positions without Classification

- BOM positions are **not transferred** if no classification exists.

Additional Considerations:

- Both **V1** and **V2** implementations allow for further customization if required by the business.
- The sample BAdl implementations can be adapted to meet specific requirements by modifying the standard logic provided in the default classes.

Uploading Packaging elements from Material Classifications

The upload of packaging element data from Material Classification requires that the according data exists in the 'Material'. In addition, an Upload Entity Processor implementation for the respective Upload Entity PE_MCL exists in the system and is returned by the BAdl implementation of /VPCOE/BADI_UPH_CUSTOM.

The Report name is /VPCOE/R_UPH_PCKG_MCL_LOAD.

The transaction code /VPCOE/UPH_PCKG_MCL belongs to this report execution.

Implementing the Upload Entity Processor

An Upload Entity Processor implementation for the Upload Entity PE_MCL should inherit from base class /VPCOE/CL_UPH_PROC_BASE_MCL. This base class is already implementing the methods of the interface /VPCOE/IF_UPH_ENTITY_PROC.

The mapping of the material classification must be provided by implementing the method /VPCOE/IF_UPH_ENTITY_MCL_PROC~MAP_MAT_CLAS_DATA to determine which classification is relevant for the business case.

Method /VPCOE/IF_UPH_ENTITY_MCL_PROC~GET_RELEVANT_MAT_CLAS must be also implemented.

For an example implementation of this entity processor, see class /VPCOE/CL_UPH_PCKELEM_MCL_EXMPL and the contained ABAP documentation.

Report parameters

- Initial Load / Delta Load (Radio buttons):

If the Initial Load radio button is selected, then the report selects the material classifications based on the selection screen parameters.

When the Delta Load radio-button is selected then the previous successful initial load of the selection screen parameters is used and therefore all selection screen parameters except the Test Mode are hidden. In addition to that, during delta load, only those specifications that have been updated since the last successful initial or delta load will be extracted and transferred.

- **Test Mode (Check box):**

If the Test Mode check box is selected, then the entire processing in terms of extraction and mapping of material classifications remains same, only the transferring of the data to the SAP Responsible Design and Production API is skipped. Test Mode is supported in initial load and delta load.
- **Source ID (Input parameter):**

Source ID is a mandatory input parameter that is transferred to SAP Responsible Design and Production. It identifies from which source system the data is coming.
- **RFC Destination (Input parameter):**

This parameter is mandatory and contains the customer implemented target destination for the SAP Responsible Design and Production API (defined in transaction SM59). The default value RDP_REPL_API can be changed here.
- **Use Filter Criteria:** The following input parameters are input enabled for data filtering:
 - **Material (include ranges, patterns, multi selection):** Filter for material classification that are assigned to this material
 - **Material type (include ranges, patterns, multi selection):** Filter for material classifications that are assigned to materials of this material type
 - **Change Date of Whole Spec (include ranges, multi selection):** Filter for materials that were last changes on these dates

Handling of Multiple Versions

Material Classification supports multiple versions with date and time related validity via Change Numbers. However, the report always extracts a packaging element out of the Material Classification as it is valid on the day of execution of the replication.

Change Date of Material

Following scenarios are supported:

1. If only from-date is provided, only materials changed **on** that specific date are extracted. Also, the change of a characteristic value from the material classification is considered as change.
2. If from-date and to-date are provided, all materials changed between (\geq from-date and \leq end-date) are extracted. Also, the change of a characteristic value from the material classification is considered as change.

Default Values for target RFC destination Parameters

- The parameter should have the customer implemented target destination as default. If the customer does not have custom implementation for target RFC destination, then VPCOE_RDP_PLM_PKG_ELMNT as default value but can be adjusted by the user. This

gives customers more flexibility in choosing a destination name and avoids potential name conflicts.

Class Overview

Report	/VPCOE/R_UPH_PCKG_MCL_LOAD	Extract Packaging elements from Mat. Classification
Factory Class	SAME - Add new transfer mapper for the composition	
BADI	Call right upload entity from the entity processor	
WRAP_SPEC	No Change Needed	
WRAP_VA	No Change Needed	
Implementing Class	/VPCOE/ZCL_UPH_CUSTOM_IMPL	Call the right example implementation;
Example Implementation	/VPCOE/CL_UPH_PROC_MCL_EXAMPLE	Custom/Example Implementation for Extraction of Packaging Element from Material Classification
Logger class	No change	

Uploading Packaging Composition Items from Handling Units

This report is used when it is necessary to **add additional packaging elements** to an existing packaging composition in SAP Responsible Design and Production (RDP).

Use Case

- Products often require **tertiary packaging materials** (e.g., pallets, stretch foil) to protect and secure finished products during transport.
- Such packaging materials are typically bundled as **handling units (HUs)**. For example:
 - A **pallet** with a dozen cardboard boxes.
 - Each box containing individually packed finished goods.
 - The pallet and boxes are wrapped with a few meters of stretch foil.

How the Report Works

- The report looks up the **effectively used packaging material** from handling units in **deliveries** within a specified timeframe.
- It adds the corresponding **packaging elements** to the existing **packaging compositions** in RDP, each element with its **proportionate quantity**.
- This enables RDP to identify how much of each packaging material is used per finished product unit.

Handling Variations in Packaging Material Quantities

- It's possible that deliveries with the same packaging composition may have slightly different packaging material quantities.
- To account for such variations, the report **calculates the average** over the defined period to provide a more accurate estimate.

Extensibility and Custom Implementation

Due to the variety of handling unit configurations, the report offers extensibility options for:

- **Extracting handling units** using custom logic.
- **Updating packaging compositions** with additional items.

Upload Entity Processor for PCI_HU

- An **Upload Entity Processor** implementation for the respective entity PCI_HU must be present in the system.
- This implementation is returned by the BAdI **/VPCOE/BADI_UPH_CUSTOM**.

Report for Uploading Handling Unit Data

- **Report Name:** /VPCOE/R_PCKG_CMP_HU_LOAD
- **Purpose:** Replicate packaging composition items derived from handling units to RDP.

Prerequisites and Limitations

Prerequisites

- To use the report for uploading packaging composition items:
 - Create a **Replication Configuration** in RDP through the **Configuration Cockpit** for the object type **Packaging Composition – Additional Items**.

Limitations and Considerations

When implementing the BAdI for uploading additional packaging composition items, consider the following limitations:

- **Separate Source System Requirement:**
 - Replication configurations for **Packaging Composition** and **Packaging Composition – Additional Items** cannot be created in the same source system.
 - A replication configuration for **Packaging Composition – Additional Items** must refer to a system **not yet used**.
- **Handling Data from the Same System:**
 - If data for **Packaging Composition** is pushed from the same system:
 - Create a replication configuration with a **different Source System ID**.
 - Use this alternative name only when calling the API for **packaging composition items**.

Implement the Upload Entity Processor

An Upload Entity Processor implementation for the Upload Entity PC_HU should inherit from base class /VPCOE/CL_UPH_PROC_BASE_HU. This base class is already implementing the methods of the interface /VPCOE/IF_UPH_ENTITY_PROC and only the mapping of the HU

must be provided by implementing the method /VPCOE/IF_UPH_ENTITY_HU_PROC~MAP_HU_DATA.

Sample BAdi implementation is provided with entity processor class /VPCOE/CL_PCKCOMP_HU_EXMPL.

The transaction code /VPCOE/HU belongs to this report execution.

The screenshot shows the SAP Fiori launchpad with the 'Handling Units Load' application selected. The interface includes a header with the application name and a toolbar with a magnifying glass icon. Below the header, there is a section for 'Test Mode' with a checked checkbox. The main area contains input fields for 'Source ID' (set to 'ECC_EMEA') and 'RFC Destination' (set to 'VPCOE_RDP_PLM'). Underneath these fields is a section titled 'Use Filter Criteria' containing a table with many rows. Each row has a column for a filter criterion (e.g., Start Date, Material Number, Material Type, etc.) and a column for a date input field ('08.06.2025' for Start Date). To the right of each input field is a 'to' field and a small icon. A vertical column of file icons is positioned to the right of the 'to' fields. The entire interface is presented in a clean, modern SAP-style design.

Report Parameters

Please consider the following when using report selection parameters:

- Test Mode (Check box):

If the Test Mode check box is selected, then the entire processing in terms of extraction and mapping of HU data remains same only the transferring of the data to the **SAP Responsible Design and Production API** is skipped. **Test Mode** is supported in **Initial Load** or **Delta Load**.

- **Source ID** (Input parameter):

This mandatory input parameter is transferred to SAP Responsible Design and Production. It identifies from which source system the data is coming. It is required that the source ID of the handling unit is different from the source system of the packaging composition that should be enriched.

- **RFC Destination** (Input parameter):

This parameter is mandatory and contains the customer implemented target destination for the SAP Responsible Design and Production API (defined in transaction **SM59**). The default value VPCOE_RDP_PLM can be changed here.

- Use Filter Criteria:

- **Start Date**: Defines the start date of the lookback period. All deliveries that have a goods movement posting date between start date and the end date are selected for processing.

- **End Date** (hidden by default): Defines the end date of the lookback period. The default value is today. This field can be displayed by entering the **DISPLAY_VALIDITY_OK** code.

The following filter criteria can be entered including ranges, patterns, and multi selection:

- **Material Number**: Filter the materials of the delivery items.
- **Material Type**: Filter the material types of the delivery items.
- **Material Group**: Filter the material groups of the delivery items.
- **Plant**: Filter the plants of the delivery items.
- **Sales Organization**: Filter deliveries which belongs to the given sales organization.
- **Delivery Type**: Filter deliveries for the given delivery type.
- **Ship-to Party**: Filter deliveries for the given ship to party.
- **Ship-to Country**: Filter deliveries for the given ship to country/region.
- **Item Category**: Filter the item category of the delivery items.
- **Distribution Channel**: Filter deliveries for the given distribution channel.
- **Division**: Filter deliveries for the given division.
- **Delivery Number**: Filter deliveries for the given delivery number.
- **Delivery Plant Country**: Filter the plant country of the delivery items.

Because of the varieties of customizing on HU, the report is offering a sample Badi implementation covering:

- Extracting data for additional packaging composition items from handling units.

In this step, the report finds all the deliveries issued within the specified Lookback Period, which were packed using Handling Units. Please, note that in standard logic only HU items with item category HUPM and LEIH are considered. Please, adjust the logic adding your custom item categories if any. Then, packaging materials are allocated to their respective products and average use of packaging per product is calculated.

- Identifying the packaging composition from RDP that need to be enriched.

In this step, all existing packaging compositions for the products which were found in deliveries from the above step will be identified. If no packaging composition for a product is found in RDP, however, additional packaging composition items are calculated from HU data, no new packaging composition will be created in RDP, but the corresponding message will be added to the log output of the report.

- Replicating additional items to RDP for specific Packaging Composition.

In this step, Packaging Compositions are updated on RDP with additional packaging composition items and calculated quantities.

The distribution algorithm considers the handling units in all found deliveries. When it calculates how much of packaging material X was used for finished product Y, it only considers handling

units, that contain at least one line item of finished product Y. Other handling units that used packaging material X, but didn't contain finished product Y, are not considered.

The following generic formula is used to calculate the average usage of any packaging material (PM) per finished product (FP):

$$\text{Average PM per FP} = \frac{\sum_{\text{Handling Units (HU)}} (\text{PM used in HU} \times \frac{\text{Quantity of FP in HU}}{\text{Total Quantity of Products in HU}})}{\text{Total Quantity of FP in all HUs using PM}}$$

Class Overview

Report	/VPCOE/R_PCKG_CMP_HU_LOAD	Extract Packaging Composition Items from Handling Units
Factory Class	SAME - Add new transfer mapper	
BADI	Call right upload entity from the entity processor	GC_UE_PCI_HU
WRAP_SPEC	No Change Needed	
WRAP_VA	No Change Needed	
Example Implementation	/VPCOE/CL_PCKCOMP_HU_EXMPL	Custom/Example Implementation for Extraction of Packaging Element from HU
Logger class	No change	

Extensibility in packaging data reports

The upload of packaging data from PLM (Product Lifecycle Management) requires that the according data exists in the Environment, Health, and Safety specification database. In addition, an Upload Entity Processor implementation for the respective Upload Entity PE_PLM and PC_PLM exist in the system and is returned by the BAdl implementation of /VPCOE/BADI_UPH_CUSTOM.

The upload of packaging composition data from recipes requires that the accompanying data exists in Recipe Management. In addition, an Upload Entity Processor implementation for the Upload Entity PC_RCP exists in the system and is returned by the BAdl implementation of /VPCOE/BADI_UPH_CUSTOM.

The upload of packaging composition data from BoM requires that the according data exist in the bill of material. In addition, an Upload Entity Processor implementation for the respective Upload Entity PC_BOM exists in the system and is returned by the BAdl implementation of /VPCOE/BADI_UPH_CUSTOM.

The upload of packaging elements data from Material Classifications requires that the according data exist in the material classification. In addition, an Upload Entity Processor implementation for the respective Upload Entity PC_MCL exists in the system and is returned by the BAdl implementation of /VPCOE/BADI_UPH_CUSTOM.

The upload of packaging composition data from Handling Units requires that the according data exist in handling units. In addition, an Upload Entity Processor implementation for the respective Upload Entity PCI_HU exists in the system and is returned by the BAdl implementation of /VPCOE/BADI_UPH_CUSTOM.

Which entity processors are used for the corresponding Upload Entity is controlled by the BAdl /VPCOE/BADI_UPH_CUSTOM (Enhancement Spot /VPCOE/ES_UPH_CUSTOM). The BAdl mechanism allows to exchange a processor if needed, e.g. if customer specific data structures must be read.

Further, the BAdl implementation controls the used destination configuration. Destinations are possible for:

1. The source of the Packaging data (RFC destination to another system)
2. The target endpoint of the RDP Push API

VPCOE/BADI_UPH_CUSTOM – technical documentation

The Business Add-In (BAdl) /VPCOE/BADI_UPH_CUSTOM that is assigned to Enhancement Spot /VPCOE/BADI_UPH_CUSTOM is used during the upload of packaging related data to the API of SAP Responsible Design and Production (RDP). Its main task is to provide an extensibility mechanism to integrate customer specific implementations for extracting and processing of packaging related data.

This packaging related data is in the following called **Upload Entity**. An Upload Entity consists of:

- An RDP business object, for example, a packaging element with all its defined child nodes, such as, packaging fractions, product assignments and so on.
- The area of extraction, for example, Plant Maintenance (PLM) or Recipe Development (RD).

The following Upload Entities are currently defined in the system:

- **PE_PLM**: Packaging elements from PLM
- **PC_PLM**: Packaging compositions from PLM
- **PC_RCP**: Packaging compositions from Recipe Development
- **PC_BOM**: Packaging compositions from Bill of Material (BOM)
- **PE_MCL**: Packaging elements from Material Classification
- **PE_HU**: Packaging Compositions Items from Handling Units

For each Upload Entity there is a corresponding report to start the data upload.

When one of these reports is executed, the mentioned BAdl is called. As a result of the call, an instance of a customer specific implementation for the extraction and processing of the Upload Entity data must be returned. This instance is called Upload Entity Processor.

Handling Multi-Level BOMs in Packaging Composition Upload

Supported Depth for Subordinate Packaging Elements

- **SAP Responsible Design and Production (RDP)** currently supports only **one level** of subordinate packaging elements.
- As a result, the **example entity processor mapping implementation** used in the **Packaging Composition Upload Report for BOM** processes **only the first level** of the assembly BOM.
- Deeper levels beyond **level 1** are **not processed** by the standard implementation.

Handling Multi-Level BOMs (Level 1+N)

- If a **multi-level BOM** contains relevant subordinate packaging elements beyond the first level (**level 1+N**), this scenario is **not handled** by the standard logic.
- To accommodate such cases, a **custom mapping implementation** should be developed to:
 - Traverse deeper levels of the BOM hierarchy.
 - Extract and map relevant subordinate packaging elements beyond the first level.
 - Ensure accurate transfer of all necessary data to RDP.

Custom Mapping Considerations

- When implementing a **custom mapping logic**:
 - Ensure that all relevant subordinate elements beyond the first level are captured.
 - Adapt the mapping logic to correctly represent the additional levels of subordinate packaging elements in the JSON payload.
 - Test the implementation thoroughly to validate the correct transfer of data to RDP.

Prerequisites for Uploading Packaging Element and Packaging Composition Data

To successfully upload packaging element or packaging composition data from different sources to SAP Responsible Design and Production (RDP), the following prerequisites must be met:

1. Data Availability in Source Systems

Ensure that the required data exists in the respective source systems before initiating the upload:

- PLM (Product Lifecycle Management):
 - For uploading packaging composition data from PLM, the corresponding data must exist in the Environment, Health, and Safety (EHS) specification database.
- Recipe Development:
 - For uploading packaging composition data from Recipe Development, the corresponding data must be available in the Recipe Development system.
- Bill of Materials (BOM):
 - For uploading packaging composition data from a BOM, the relevant data must exist in the Bill of Materials maintained in the system.
- Material Classification:
 - For uploading packaging element data from Material Classification, the required data must be classified in the material master data.

2. Upload Entity Processor Implementation

- An Upload Entity Processor implementation must exist in the system for the respective Upload Entity.
- This implementation ensures that data is correctly processed and transferred to RDP.

3. BAdI Implementation for Upload Entity Processor

- The BAdl responsible for providing the Upload Entity Processor instance must be implemented.
- A sample BAdl implementation is provided for reference, which demonstrates how to configure and extend the processor logic.

4. RFC Destination and OAuth Configuration

- The RFC destination and OAuth configuration must be properly maintained in the system to enable communication with the RDP Push API.

5. BAdl Standard Settings and Configuration

- For more information on standard settings related to this BAdl (such as filters, single or multiple usage scenarios), refer to the Spot Element Definitions tab in the BAdl Builder using transaction SE18.

BAdi Methods

The BAdl definition is active in the Integration accelerator package. It contains the following methods from interface /VPCOE/IF_UPH_CUSTOM:

· get_entity_processor:

This method returns which entity processor is used for the corresponding upload entity. The BAdl mechanism allows to exchange a processor if needed, for example, if customer specific data structures must be read.

In general, the implementation of this method will return a customer specific Upload Entity Processor implementation (that implements the IF_SURDP_UPH_ENTITY_PROC interface) for each Upload Entity type.

· get_target_endpoint_dest:

This method will return the end point destination of the target system. If this method is defined, the returned value will be displayed as the default RFC destination in the report selection screens for all the upload entities. If no specific value is returned, the default destination RDP_REPL_API is used.

BAdi Implementations

The BAdl implementation must be defined by the user and is not provided by SAP. As example see class /VPCOE/CL_EXMPL_UPH_CUSTOM .

The custom Upload Entity Processors must implement the /vpcoe/if_uph_entity_proc interface. To ease the definition of custom entity processors, there are base classes available which provide already necessary functionality:

- /VPCOE/CL_UPH_PROC_BASE_PLM for the extraction out of PLM
- /VPCOE/CL_UPH_PROC_BASE_RCP for the extraction out of Recipe Development
- /VPCOE/CL_UPH_PROC_BASE_BOM for the extraction out of Bill of Material
- /VPCOE/CL_UPH_PROC_BASE_MCL for the extraction out of Material Classification
- /VPCOE/CL_UPH_PROC_BASE_HU for the extraction from Handling Units

Therefore, custom Upload Entity Processors should inherit from these base classes. For examples of the custom Upload Entity Processors please have a look at the following classes:

- /vpcoe/lcl_exmpl_cust_cmp_plm for packaging composition extraction out of PLM
- /vpcoe/lcl_exmpl_cust_cmp_rcp for packaging composition extraction out of Recipe Development
- /vpcoe/lcl_exmpl_cust_cmp_bom for packaging composition extraction out of Bill of Material
- /vpcoe/lcl_exmpl_cust_pe_plm for packaging element extraction out of PLM

- `/vpcoe/lcl_exmpl_cust_pe_mcl` for packaging element extraction out of Material Classification
- `/vpcoe/cl_hu_exmpl` for packaging composition items extraction from handling units

Common class overview

Interface/Class	Description
<code>/VPCOE/CL_UPH_EXEC_LOAD_WRAP</code>	Wrapper Class for the Execution of an Entity Upload (used by the report)
<code>/VPCOE/IF_UPH_ENTITY_PROC</code>	Interface for Upload Entity Processors
<code>/VPCOE/CL_UPH_FACTORY</code>	Static Factory class, which provides the Upload Entity Processor implementations per Upload Entity
<code>/VPCOE/IF_UPH_CUSTOM</code>	BADI Interface for custom aspects of the data upload
<code>/VPCOE/BADI_UPH_CUSTOM</code>	BADI Definition for custom aspects of the data upload.
<code>/VPCOE/IF_UPH_LOGGER</code>	General Logger Interface
<code>/VPCOE/CL_UPH_LOGGER</code>	Default Logger implementation
<code>/VPCOE/CL_UPH_PROC_BASE</code>	Base (abstract) Upload Entity Processor class. Concrete Entity Processors implementations should inherit from this base class.

Messages

The Upload report shall output the following messages (if present: when the condition defined in column rule is met).

Message class: `/VPCOE/PLM`

API Version Selection for Packaging Data Integration

The RDP Integration Accelerator supports both V1 and V2 versions of the Packaging Data API. The version to be used can be explicitly defined in the entity processor class within the BAdl implementation.

Key Considerations:

- For V1 API: The processor class must be specified directly.
- For V2 API: The mapper handler class should be specified using the `GET_ENTITY_MAPPER` method.

Configuration Details:

API Version	Example Class for Implementation
V1 API	<code>/VPCOE/CL_UPH_TM_PCKG_CMP_V1</code> (Packaging Composition)
	<code>/VPCOE/CL_UPH_TM_PCKG_ELEM_V1</code> (Packaging Elements)
	<code>/VPCOE/CL_UPH_TM_HU</code> (Handling Units)
V2 API	<code>/VPCOE/CL_TM_PCKG_CMP_V2</code> (Packaging Composition)
	<code>/VPCOE/CL_UPH_TM_PCKG_ELEM_V2</code> (Packaging Elements)

Customization and Adjustments:

- A sample processor class is provided by default, but it can be replaced if further adjustments are required.
- If customization is needed, the processor class can be substituted with a custom implementation tailored to specific business needs.
- In the `GET_ENTITY_MAPPER` method, users can configure the appropriate class based on the API version selected.

This flexibility ensures seamless integration with both API versions while allowing for business-specific adjustments as needed.

Packaging fee replication and posting

SAP Responsible Design and Production (RDP) is calculating packaging fees, which needs to be considered in the pricing procedures and invoices in the SAP ERP system. Therefore, RDP provide the possibility to transfer packaging fees as pricing condition records and material classification data in ERP system.

To be able to create these invoices, data needs to be replicated regularly from SAP Responsible Design and Production to your source system. The data extraction for this purpose is possible through Packaging Fees Retrieval report. Packaging Fee Posting report allows you to fill the according data into Pricing Conditions and Material Classification.

The RDP Packaging Fees Integration:

The RDP Packaging Fees Integration facilitates the retrieval and processing of packaging fee data from SAP Responsible Design and Production (RDP) into SAP ECC/S4H. It includes multiple reports and a BAdI framework for mapping and processing data according to business needs.

1. Reports for Packaging Fee Processing

Report Name	Description	Tcode
/VPCOE/R_PCKF_RETRIEVAL	Retrieves packaging fees from RDP.	/VPCOE/PCKF_RETRIEVE
/VPCOE/R_PCKF_POSTING	Converts transferred packaging fees into pricing condition records and/or material classifications.	/VPCOE/PCKF_POSTING
/VPCOE/R_PCKF_CUSTOM_EXEMPT	Retrieves customer exemptions.	
/VPCOE/R_PCKF_COMP_CODE_EXEM	Retrieves company code exemptions.	
/VPCOE/R_PCKF_CUSTOMER_ROLE	Retrieves customer roles.	

2. BAdI Implementation for Packaging Fee Processing

- A sample BAdI implementation is provided for converting transferred packaging fees into pricing condition records and material classifications.
- The sample implementation covers:
 - Customer-dependent and customer-independent SD (Sales and Distribution) and MM (Materials Management) pricing conditions.
 - Flexible mapping of data for pricing and classification structures.

3. Customization and Mapping

- When converting transferred packaging fees into pricing conditions and material classification data, a BAdI implementation is required for mapping.
- Due to the high degree of flexibility in pricing configurations and material classifications, SAP does not provide a default implementation.
- Users can customize the mapping logic as per their business-specific pricing and classification requirements.

Prerequisites to use the reports:

- The BAdI is implemented and provides the Entity Processor instance (custom class or base class) for the Entity Types PCKG_FEE and APL_BUSP.
- The RFC destination and the OAuth configuration are maintained in the system to access the RDP API.
- Definition of condition tables, condition types, access sequence, pricing procedures

When one of these reports is executed, the BAdI implementation is called. As a result of the call, an instance of an (customer specific) Entity Processor implementation must be returned.

Example implementation class: /VPCOE/CL_EXMPL_PCKF_CUSTOM

The example implementation class of the BAdI contains an entity processor implementation (commented out) for the Packaging Fee entity provided by a local class (lcl_exmpl_pckg_fee).

For logging in custom entity processor implementation, use application Logging Object /VPCOE/RDP, Sub-object PCKG_FEE.

Packaging fee retrieval

The Packaging Fee Retrieval Report /VPCOE/R_PCKF_RETRIEVAL handles the retrieval of entity data provided by the RDP Packaging Fee API.

Both **API V1** and **API V2** are supported. Customers can select the API version by adjusting the **API path** in the RFC destination configuration.

When **RDP API V2** is used, the **Context** field is removed from the selection screen (as it is obsolete in API V2).

Retrieval of Packaging Fees

Initial Load

Delta Load

Test Mode

RFC-Destination: VPCOE_RDP_PCKF

Package size: 500

Use Filter Criteria

Report Configuration	
Report Category	
Country	
Context	RDP_DEFAULT <input style="width: 20px; height: 20px; vertical-align: middle;" type="button" value="..."/>
Business Process Direction	

Extract fees for customer independent/dependent scenario

Dependent Scenario

Independent Scenario

To use the support for **customer role-dependent fees** in the API, it is necessary to select the *Dependent Scenario* option. This sets the `includeCustomerRoleDependentFees` parameter in the request to `true`.

- If `includeCustomerRoleDependentFees` is set to false, it means the attribute `ShipToPartyRole` is empty, and only customer role-independent fees are returned.
 - If it is set to true, `ShipToPartyRole` is populated with the relevant customer role or left empty if no role is specified.
- For more information about available customer roles, see [Customer Role](#).

When the **Delta Load** radio button is selected, the previous successful Initial Load parameters are reused. In this mode, all selection parameters except *Test Mode* are hidden. During delta load, only those fees that have been updated since the last successful Initial or Delta Load will be extracted and transferred.

Example implementations for creating pricing conditions for customer-dependent and customer-independent scenarios are provided in the sample BAdI class `/VPCOE/CL_EXMPL_PCKF_CUSTOM`.

For the API documentation, see [API Reference](#).

For details on the packaging fee extracted data please have a look here: [Extracted Data | SAP Help Portal](#).

Packaging fee posting

The Packaging Fee Posting report `/VPCOE/R_PCKF_POSTING` is responsible to use the entities (calculated tax data) from the RDP for creating the pricing conditions and convert the product data to Material Classification for the product the individual record belongs to.

The screenshot shows a SAP Fiori application window titled "Posting of retrieved Packaging Fees". At the top, there is a small green circular icon with a plus sign. Below the title, it says "Packaging Fees available for posting: 186". Underneath, there is a section labeled "Additional Settings" with a dropdown menu showing "Retain failed records in days" set to "7".

When executing Packaging Fee Posting report:

- The *Posting* report attempts to post all retrieved packaging fees (previously saved in cache table)
- If any errors occurred during the posting, failed records remain in the cache for the number of days specified in the *Retain failed records in days* field. This allows users to review and analyze errors.
- If this field is set to *0 days*, the failed records are deleted immediately from the cache/temporary table.

For packaging fee posting, customer is responsible to:

- Definition of condition tables, condition types, access sequence, pricing procedures
 - Define concept for SD & MM Conditions for Packaging Fees
 - Create Condition Table(s)
 - Add Condition Table(s) to Access Sequence
 - Assign Access Sequence to Pricing Condition Type
 - Add Condition Type to Pricing Procedure
- Implement available BAdl (Copy Sample BAdl provided) and adjust the filling for packaging fees into condition records
 - Define filters based on which the data shall be replicated
 - Extend the mapping with the exact pricing condition tables
 - Logic to split the data to multiple ERP systems (optional)

Replication of Customer Exemptions

The Customer exemptions retrieval report `/VPCOE/R_PCKF_CUSTOM_EXEMPT` is handling replication of customer exemptions which can be used for the creation of customer and report fraction-based sales and distribution pricing conditions for exemptions. Those replications are currently applicable only for Extended Producer Responsibility (EPR) reporting solution for Italy (CONAI). For more information about maintaining customer and company code exemptions, see [Report Category Extension](#).

Note: If the Customer is blocked, it will not be returned in the response, even if it is applicable to the respective PackagingComposition. If the blocked Customer is the only one applicable to the PackagingComposition, then the fee with this packaging composition will be skipped from the replication.

Replication of CompanyCode Exemptions

The Company Code exemptions retrieval report `/VPCOE/R_PCKF_COMP_CODE_EXEM` is handling replication of company code exemptions which can be used for the creation of company code-based material management pricing conditions for exemptions. Those replications are currently applicable only for Extended Producer Responsibility (EPR) reporting solution for Italy (CONAI). For more information about maintaining customer and company code exemptions, see [Report Category Extension](#).

Replication of Customer Roles

The Customer Roles retrieval report /VPCOE/R_PCKF_CUSTOMER_ROLE allows the extraction of customer roles. Replication of customer roles to the SAP ERP systems is used for the identification and creation of the correct customer role and product-based sales and distribution pricing condition.

Extensibility in Packaging fee reports

The packaging fee retrieval and posting reports and also the exemptions replications and customer roles dependent fees replications are using the BAdI /VPCOE/BADI_PCKF_CUSTOM. The BAdI enables the customer to implement customer specific extensions.

Interface/Class/Report	Description
/VPCOE/ES_PCKF_CUSTOM	Enhancement Spot for BAdI
/VPCOE/BADI_PCKF_CUSTOM	BAdI Definition
/VPCOE/IF_PCKF_CUSTOM	BAdI Interface
/VPCOE/CL_EXMPL_PCKF_CUSTOM	Example Implementation for BAdI Interface

Interface /VPCOE/IF_PCKF_CUSTOM:

Method	Description
GET_ENTITY_PROCESSOR	Returns the entity processor instance for the given entity type.
GET_TARGET_ENDPOINT_DEST	Gets the default destination name. This method can return the destination name which defines a http target to the RDP Test Client.

For logging in custom entity processor implementation, use application Logging Object /VPCOE/RDP, Sub-object PCKG_FEE.

/VPCOE/BADI_PCKF_CUSTOM – technical documentation

The Business Add-In (BAdI) /VPCOE/BADI_PCKF_CUSTOM that is assigned to enhancement spot /VPCOE/ES_PCKF_CUSTOM is used during the download and processing of packaging fee data from the API of SAP Responsible Design and Production (RDP). Its main task is to provide an extensibility mechanism to integrate customer specific implementations for the retrieval and posting of packaging fee data.

Before describing this extension mechanism in more detail, it is necessary to understand the concept of Entity Types and their respective Entity Processor implementations.

Entity Type and Entity Processor

The Packaging Fee API of SAP Responsible Design and Production (RDP) is providing different entities:

- Packaging Fee (PCKG_FEE)
- Applicable Business Partners (APL_BUSP)

These entities are named in the following as Entity Type. The processing of the corresponding entity data of an Entity Type is implemented by a so-called Entity Processor class. An Entity Processor class must implement the interface /VPCOE/IF_PCKF_ENTITY_PROC that contains the following important methods:

- INIT_PROCESSOR: This method is used to initialize the Entity Processor

- PREPARE_RETRIEVE: The preparation steps for the entity data retrieval are implemented in this method.
- RETRIEVE_PACKAGE: The implementation of the entity data retrieval is implemented in this method. For example, the retrieval of the entity data from the corresponding RDP API must be implemented in this method.
- TRANSFER_PACKAGE: The transfer of the entity data to its target is implemented in this method. For example, the conversion of Packaging Fee entity data to ERP pricing conditions must be implemented here in the Entity Processor class for Entity Type PCKG_FEE.

For each Entity Type there is already a base class available in the system that must be derived for a custom logic:

- /VPCOE/CL_PCKF_PROC_PCKG_FEE: base class for Entity Type PCKG_FEE
- /VPCOE/CL_PCKF_PROC_APPL_PART: base class for Entity Type APL_BUSP

The data retrieval from the RDP API (method PREPARE_RETRIEVE and RETRIEVE_PACKAGE) is already implemented in these base classes.

But for the implementation of the customer specific conversion logic of Packaging Fee entity data to ERP pricing conditions, a custom implementation must be provided by deriving from class /VPCOE/CL_PCKF_PROC_PCKG_FEE and overriding the method TRANSFER.

BAdI Methods

The BAdI definition is active in the standard system. It contains the following methods from interface /VPCOE/IF_PCKF_CUSTOM:

- get_entity_processor:
This method returns which entity processor is used for the corresponding entity type. The BAdI mechanism allows to exchange a processor, for example, when a customer specific conversion of Packaging Fee data to ERP Pricing Conditions is needed.
If no custom implementation is returned, the Entity Processor base class is used instead.
- get_target_endpoint_dest:
This method will return the end point destination of the RDP source system. If this method is defined, the returned value will be displayed as the default RFC source in the retrieval report selection screen. If no specific value is returned, the default destination VPCOE_RDP_PCKF is used.

BAdI Implementations

The BAdI implementation must be defined by the user and is not provided by SAP. As an example, class /VPCOE/CL_EXMPL_PCKF_CUSTOM is linked as a BAdI example implementation.

For more information about settings for a BAdI, such as filters, single or multiple uses, see the Spot Element Definitions tab in the BAdI Builder (transaction SE18).

Example implementation class: /VPCOE/CL_EXMPL_PCKF_CUSTOM

The example implementation class of the BAdI contains an entity processor implementation (commented out) for the Packaging Fee entity provided by a local class (lcl_exmpl_pckg_fee).

During the posting, the packaging fee records are converted to pricing conditions of Condition Type ZRDP. Since this condition type currently holds 3 different condition tables (identified by separate

keys) the according condition table (key) is selected with regards to the available organizational data in the packaging fee.

HOW TO CHECK REPLICATION RESULTS

When running the RDP reports, the results are displayed on the screen and also are logged in SLG Object '**/VPCOE/RDP**'.

Results on the screen

When running any RDP integration report in foreground mode the replication results are visible on the screen in a similar way as below:

```
Send Delivery Data to RDP

Send Delivery Data to RDP

DELIVERY      -
Start to Process Package - 1
15 entries sent successfully
A total of 15 records were sent.
```

Application log results

- After running the RDP Integration reports you can see the results on the logged object (even when running in background mode):
 1. Open transaction 'SLG1'. Use object '**/VPCOE/RDP**'.
 2. For 'Subobject' use the required service ID or '*'. For packaging fee replication logs, use the sub-object '**PCKG_FEE**' .

Analyze Application Log

Object	/VPCOE/RDP
Subobject	DELIVERY
External ID	*
Time Restriction	
From (Date/Time)	11.06.2022 00:00:00
To (Date/Time)	11.07.2022 23:59:59
Log Triggered By	
User	*
Transaction code	*
Program	*
Log Class	Log Creation
<input type="radio"/> Only very important logs	<input checked="" type="radio"/> Any
<input type="radio"/> Only important logs	<input type="radio"/> Dialog
<input type="radio"/> Also less important logs	<input type="radio"/> In batch mode
<input checked="" type="radio"/> All logs	<input type="radio"/> Batch input
Log Source and Formatting	
<input checked="" type="radio"/> Format Completely from Database	
<input type="radio"/> Format Only Header Data from Database	
<input type="radio"/> Format Completely from Archive	

Display logs								
Date/Time/User	Nu...	External ID	Object text	Sub-object text	Transac...	Program	Mode	Log number
> 16.06.2022 14:45:28 C5318949	3		VP CoE RDP Log	DELIVERY	SEU_INT	/VPCOE/D...	Dialog pro...	000000000000003528224
> 28.06.2022 16:15:26 C5298984	3		VP CoE RDP Log	DELIVERY	/VPCOE/...	/VPCOE/D...	Dialog pro...	000000000000003659491
.....								

Message Text

- Start to Process Package - 1
- Number of entries send successfully -6 entries
- Total number of records sent successfully - 6 records.

In case of failed replication that can be resent to RDP (e.g. technical issues during replication) the payloads can be resent using [Resending Failed replication report](#).

In case user needs to trace replicated objects, the [Trace Maintenance Report](#) should be used.

KNOWN TECHNICAL ISSUES AND TROUBLESHOOTING

Technical Issue/ restriction	Solution	Valid from / to SAP Software Components
Errors when installing the general object CR, due to missed objects in standard code (ex. MEINS_D being not available in the system)	SAP Note 2526405 - /UI2/CL_JSON Corrections released in 2018 should be implemented	SAP_UI 750/751/752 UI_700 200
Multilanguage capabilities are not supported (only English language is supported for now)		

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